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A COMPILATION OF MOORED CURRENT METER DATA AND ASSOCIATED OCEAN--ETC(U)
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A COMPILATION OF MOORED CURRENT METER DATA
AND ASSOCIATED OCEANOGRAPHIC OBSERVATIONS,
VOLUME XXII (POLYMODE ARRAY III CLUSTERS A, B AND SITE MOORINGS)
1977-1979

by

Susan A. Tarbell

WOODS HOLE OCEANOGRAPHIC INSTITUTION
Woods Hole, Massachusetts 02543

September 1980

TECHNICAL REPORT

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ABSTRACT

Summaries are presented of current, pressure and temperature measurements from clusters A and B of the POLYMODE III experiment. These clusters had five moorings apiece and were deployed for 11.5 months. With a few exceptions, current meters were set at nominal depths of 200, 1500 and 4000 m and temperature/pressure recorders at 400 and 2800 m on each mooring. A site mooring was deployed at both cluster locations for an additional 17 months.

Displays include time series, histograms, progressive vector diagrams, scatter plots, spectra, and statistics.

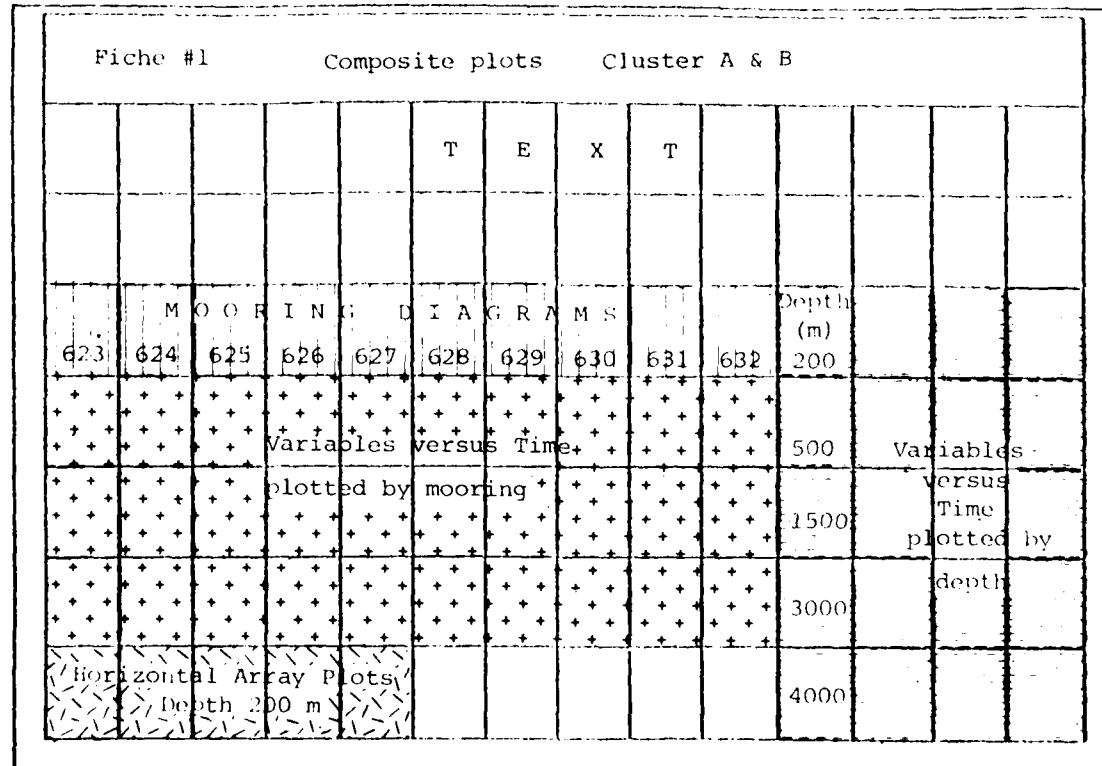
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Organization of Fiche and Printed Pages

The complete report is produced on four fiche pages. The text and some composite figures of variables plotted vs. time as horizontal or vertical arrays are printed. The first fiche includes the text and composite plots from Clusters A and B. Fiche #2 and #3 contain various displays of the basic data: STATS, SPECTRA etc. from Cluster B and Cluster A respectively. Basic data displays and composite plots for both Cluster A site and Cluster B site moorings are presented on fiche #4.

Diagrams of Fiche Organization



Fiche #2,3		Basic data presentation				Cluster A & B			
Statistics		& Spectral diagrams							
		Histograms							
Scatter plots		& Progressive vector diagrams							
		Variables versus time							
Current meter data identifier									
T/P data identifier		L	O	C	A	T	I	O	N
Statistics		& Spectral diagrams							
		Histograms				Variables versus time			

Fiche #4 Polymode Array 3 Site data for Clusters A & B								Composites					
Basic data presentation cont.													
								Moorings					
								Variables					
								+ vs. +					
								Time					
Current meter data identifier													
SITE A				SITE B									
T/P data identifier													

ACKNOWLEDGMENTS

The Engineering, Operations and Data Processing sections of the W.H.O.I. Buoy Group designed, prepared, deployed and recovered the moorings, prepared the current meters, processed the data, and produced the data report. TP preparation was carried out under John Dahlen at the Draper Laboratory. TP data were processed by Charmaine King under the direction of Professor Carl Wunsch at M.I.T. Data analysis was by Lee-Lueng Fu and Professor Wunsch.

TP preparation and data processing were supported by National Science Foundation grants OCE 76-80210 and OCE 78-19833. Mooring deployments and recoveries, mooring and current meter preparation, and current meter data processing were funded by National Science Foundation grant OCE 76-24232 and under Office of Naval Research contract N00014-76-C-0197.

PREFACE

This is the twenty-third volume in a series of Technical Reports displaying data recorded by moored instruments.

Volume XXIII presents data from POLYMODE Cluster A, Cluster B and the two Cluster site moorings. Data collected at the POLYMODE Cluster C location is presented by C. J. Koblinsky et al. (1979), Oregon State University Reference 79-12, OSU Data Report #75 entitled "A compilation of observations in the Atlantic North Equatorial Current".

W.H.O.I. Technical Report 79-88 contains an index of the data recovered by the Moored Array Project between 1973 and 1978, a bibliography of papers written by associated scientists, and diagrams of mooring locations and durations.

* * * * *

Volume #	W.H.O.I. ref. #	Notes year expt.
I	65-44	Webster, F. and N. P. Fofonoff
II	66-60	Webster, F. and N. P. Fofonoff
III	67-66	Webster, F. and N. P. Fofonoff
IV	70-40	Pollard, R. T.
V	71-50	Tarbell, S. and F. Webster
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VIII	75-7	Pollard, R.T. and S. Tarbell
IX	75-68	Tarbell, S., M. G. Briscoe and D. Chausse
X	76-40	Tarbell, S.
XI	76-41	Tarbell, S.
XII	76-101	Chausse, D. and S. Tarbell
XIII	77-18	Tarbell, S. and A. W. Whitlatch
XIV	77-41	Tarbell, S., R. Payne and R. Walden
XV	77-56	Tarbell, S. and A. W. Whitlatch
XVI	78-5	Tarbell, S. and A. Spencer
XVII	78-49	Tarbell, S., A. Spencer and R. E. Payne
XVIII	79-65	Tarbell, S., M. G. Briscoe and R. A. Weller
XIX	79-34	Spencer, A., C. Mills and R. Payne
XX	79-56	Spencer, A.
XXI	79-85	Mills, C. and P. Rhines.
XXII	79-87	Tarbell, S. and R. Payne.

INTRODUCTION

The POLYMODE program is an international cooperative scientific investigation of the dynamics and statistics of mesoscale motions in the sea, the energy sources of these motions, and their contribution to the general circulation of the ocean. POLYMODE includes theoretical investigations, numerical experiments, and field experiments. The largest element of the field program is the statistical-geographical experiment designed to determine the distribution of energy levels and space and time scales of the eddy field throughout the western North Atlantic using current meter arrays, SOFAR float arrays, and hydrographic and XBT work.

Three current meter arrays were set. The locations are shown in Figure 1. Array I was deployed to define the statistics of the mesoscale motions to the east and north of the MODE-I site (28°N , 70°W), and to resolve the time and length scales in that region. Data from Array I were described in a previous report (Spencer, et al., 1979).

The goals of Array II were more closely defined. They involved a comparison of the eddy statistics in a region further to the north and east with those from the first array; an examination of the vertical structure of the eddy field, the contributions of the Reynolds stress to momentum and vorticity budgets for the mean flow, horizontal heat advection, and energy transfer terms; and a comparison with numerical models and ideas about the general circulation. The Array II data were also described in an earlier report in this series (Tarbell, et al., 1978).

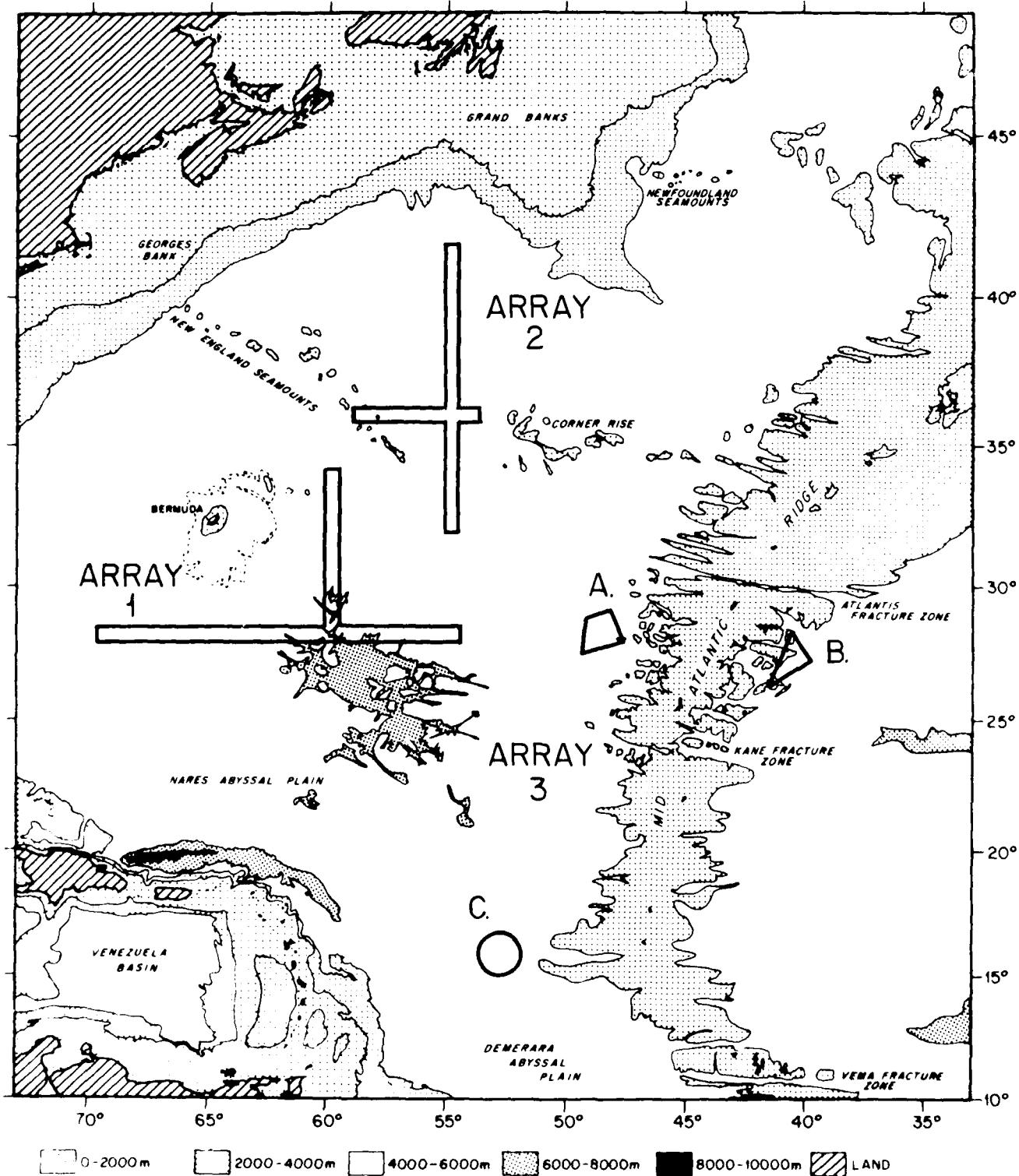


Figure 1. Location of POLYMODE Arrays 1, 2 and 3

Array III was composed of three clusters. Cluster C was designed to look at the baroclinic instability of the North Equatorial Counter-current as an eddy-producing mechanism. The moorings in this cluster were set and retrieved, and the data processed by Nova University personnel.

Clusters A and B, the subject of this report, were located on the western and eastern sides of the Mid-Atlantic Ridge. They were designed to examine differences in the eddy field and the mean flow on either side of this mid-ocean feature, and to compare the eddy statistics in this region with similar statistics in previously studied regions. The complete clusters were set for 11.5 months. One mooring in each cluster was redeployed for an additional 17 months (site moorings) to gain additional information on long period statistics. We might add that the 17 months is the longest mooring duration that the Buoy Group has attempted.

Locations of the moorings in clusters A and B are shown in Figure 1, relative mooring positions in Figure 2. Mooring details are given in Table 1.

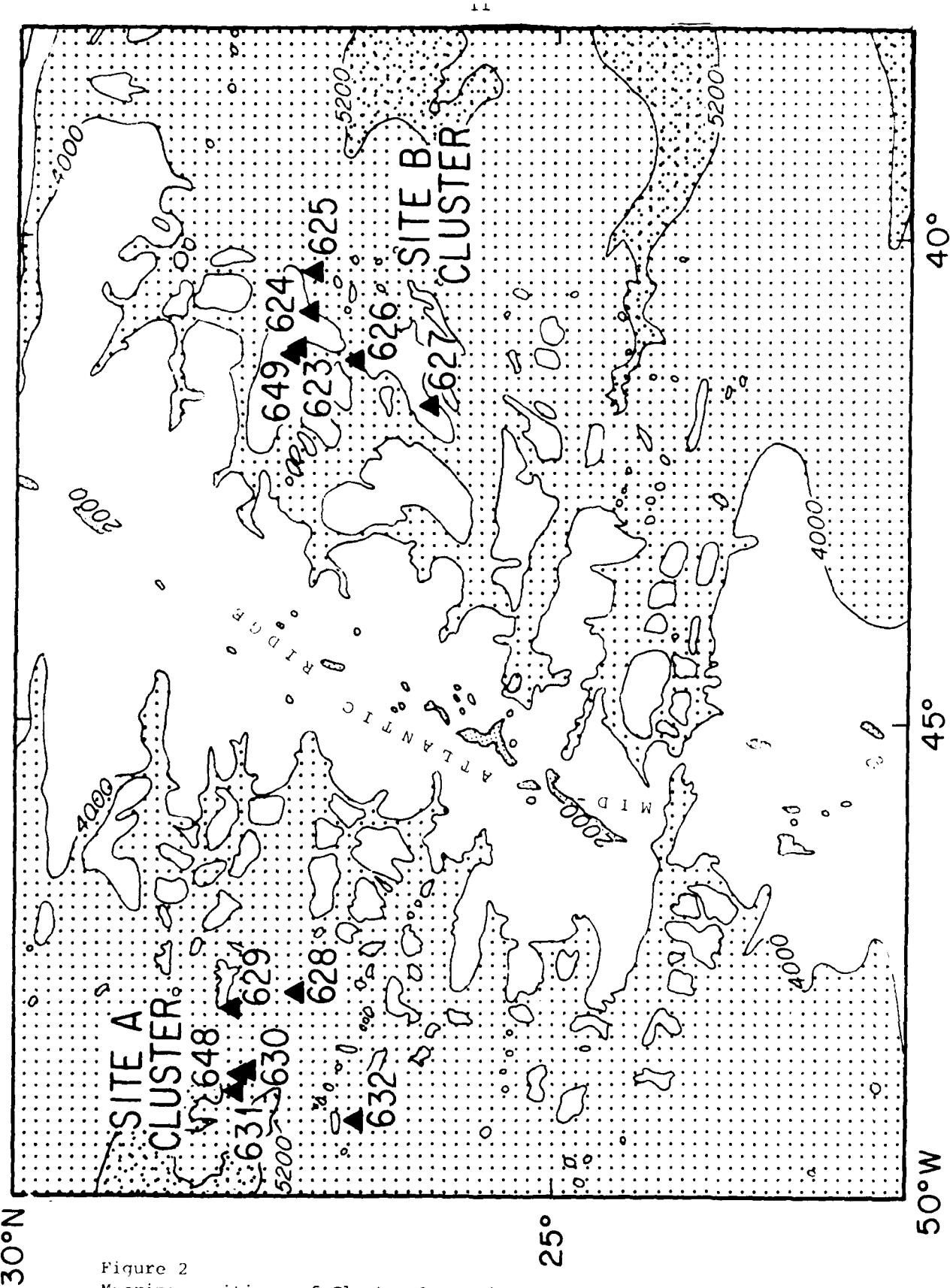


Figure 2
Mooring positions of Cluster A & B (623-632) and the later Site A & B (648-649) moorings.

TABLE 1

Mooring and instrument information, depth measured in meters, data sampling measured in seconds (5.27/3600 is a burst sampled series with bursts of data every 3600 seconds). Variables include East component, North component, Direction, Speed, Temperature, Pressure and Time.

*MOORING	- - - - -	*INC.	*TYPE	*DEPTH	*LATITUDE*	LEN ^G .	*DAYS*	SET	/RECOVERED	* COMMENTS
*DATA	- - - - -	* NC.	*DEPTH	*INSTR.*	SAMPLING	*DAYS*	VARIABLES*			
623 INT	4251	27	24.8N	41	07.7W	349	77-	VI	-11/78-	V -26 CLUSTER 3
6231	128	V-5113		900		346			ENDSTT	
6232	496	TP#20		1920		348			TPT	
6233	843	TP#44		1920		345			TPT	
6234	1426	M-142T		5.27/3600		345			ENDSTT	
6235	2801	TP#07		1920		295			TPT	
6237	3927	M-256T		5.27/3600		345			ENDSTT	
6238	4307	TP#62		1920		345			TPT	MOUNTED ON RELEASE
624 INT	4372	27	17.5N	40	45.5W	347	77-	VI	-12/78-	V -25 CLUSTER 4
6241	214	TP#27		1920		344			TPT	
6242	529	M-198C		5.27/3600		344			ENDSTT	
6243	1528	M-207I		5.27/3600		344			ENDSTT	
6244	2829	TP#28		1920		344			TPT	
6245	4028	M-260T		5.27/3600		175			ENDSTT	CHANNEL A ONLY
625 INT	4723	27	14.5N	40	21.1W	347	77-	VI	-14/78-	V -25 CLUSTER 5
6251	189	V-0106		900		343			ENDSTT	
6252	483	TP#5		1920		343			TPT	
6253	1488	M-206C		5.27/3600		343			ENDSTT	
6254	2807	TP#29		1920		343			TPT	
6255	3990	M-261T		5.27/3600		343			ENDSTT	
626 INT	4315	26	52.7N	41	12.8W	346	77-	VI	-13/78-	V -25 CLUSTER 6
6261	215	V-0434		900		101			ENDSTT	MOTOR DRIVER BOARD
6262	507	TP#37		1920		153			TPT	
6263	1514	M-212T		5.27/3600		342			ENDSTT	
6264	2821	TP#45		1920		342			TPT	
6265	4015	M-227C		5.27/3600		342			ENDSTT	
627 INT	3857	26	09.8N	41	40.7W	344	77-	VI	-14/78-	V -24 CLUSTER 6
6271	206	V-0111		900		341			ENDSTT	
6272	531	TP#54		1920		341			TPT	
6273	1505	M-213T		5.27/3600		341			ENDSTT	
6274	2800	TP#51		1920		190			TPT	
6275	3407	M-269C		5.27/3600		341			ENDSTT	WATER IN CASE

Table 1 (cont.)

628	INT	4961	27 25.6N	47 50.0W	340	77- VI -16/78- V -22	CLUSTER A
6282		505	M-240T	5.27/3600	3?	ENDSTT	ROTOR QUIT APRIL 15
6283		1489	M-271T	5.27/3600	300	ENDSTT	
6284		2807	TP#10	1920	337	TPT	
6285		3994	M-272C	5.27/3600	337	ENDSTT	NO ROTOR AUG.15 TO JAN.15
629	INT	4954	28 01.0N	48 03.3W	339	77- VI -17/78- V -22	CLUSTER A
6291		203	V-0435	900	336	ENDSTT	
6292		505	TP#47	1920	336	TPT	
6293		1500	M-257T	5.27/3600	336	ENDSTT	
6294		2807	TP#11	1920	273	TPT	
6295		4006	M-273T	5.27/3600	336	ENDSTT	CLOCK DRIFTS 13H.
630	INT	4895	27 51.7N	48 39.4W	338	77- VI -17/78- V -21	CLUSTER A
6301		200	V-0184	900	335	ENDSTT	
6302		542	TP#50	1920	335	TPT	
6304		1498	M-215T	5.27/3600	335	ENDSTT	
6305		2800	TP#17	1920	335	TPT	
6306		3498	TP#6	1920	335	TPT	
6308		4908	TP#61	1920	335	TPT	
631	INT	5106	27 55.8N	48 52.1W	337	77- VI -18/78- V -18	CLUSTER A
6311		212	V-5105	900	334	ENDSTT	
6312		546	TP#13	1920	334	TPT	
6313		1510	M-276T	5.27/3600	334	ENDSTT	NO COMPASS VALUES
6314		2857	TP#3	1920	334	TPT	
6315		4016	M-262T	5.27/3600	334	ENDSTT	
632	INT	4881	26 51.8N	49 13.5W	336	77- VI -18/78- V -20	CLUSTER A
6321		190	V-0436	900	334	ENDSTT	
6323		1488	M-264T	5.27/3600	165	ENDSTT	NO ROTOR VALUES AFTER DEC. 2
6324		2796	TP#24	1920	333	TPT	
6325		3993	M-266T	5.27/3600	333	ENDSTT	
648	INT	4881	27 51.4N	48 40.8W	515	78- V -22/79- X -18	CLUSTER A SITE
6481		178	V-0109	900	513	ENDSTT	
6482		478	TP#73	1920	513	TPT	
6483		828	TP#35	1920	513	TPT	
6484		1479	V-0117	900	513	ENDSTT	
6485		2779	TP#39	1920	513	TPT	
6486		3478	TP#46	1920	513	TPT	
6487		3978	V-0118	900	513	ENDSTT	
649	INT	4268	27 25.6N	41 09.4W	513	78- V -26/79- X -20	CLUSTER B SITE
6491		216	V-0108	900	511	ENDSTT	
6492		516	TP#74	1920	512	TPT	
6493		866	TP#30	1920	512	TPT	
6494		1517	M-175C	5.27/3600			Flooded
6495		2818	TP#40	1920	512	TPT	
6496		3417	TP#81	1920	512	TPT	
6497		4018	V-0108	900	511	ENDSTT	

Instrumentation

The instruments represented in this data report are the Vector Averaging Current Meter (VACM), the EG&G Model 850 and the Temperature-Pressure Recorder (TP).

Both current meters use a Savonius rotor to measure water speed and a vane and internal compass to measure direction. In the VACM, east and north components are calculated from the compass and vane values 8 times per rotor revolution. The components are accumulated over the recording interval resulting in vector averaged velocities. In the 850 a series of 5.27 second samples of speed and instantaneous direction samples are recorded at the beginning of each recording interval. The VACM and 850 have a thermistor embedded in their end caps just above the vane. Temperature accuracy is approximately $.01^{\circ}\text{C}$ (Payne *et al.*, 1976). Resolution is $.07 \times 10^{-3}^{\circ}\text{C}$ for the VACM and $3.6 \times 10^{-3}^{\circ}\text{C}$ for the 850 current meter.

The suffix "t" on an 850 instrument designation (M-261t) means that the instrument has been modified to measure temperature. The suffix "c" (M-206c) means that it has had complementary metal oxide semiconductor (CMOS) circuitry installed and also measures temperature.

The TP was developed at the Draper Laboratory of M.I.T and has been used extensively since 1973. Temperatures have a resolution of $.0001^{\circ}\text{C}$ and an accuracy of $.01^{\circ}\text{C}$ (Wunsch and Dahlen, 1974). Pressures are accurate to about .03% of full scale for each sensor.

All three types of instruments contain crystal oscillators with an accuracy of 1 second per day to set the time base. The VACM and TP record on Phillips-type cassettes with Sea-Data recorders. The 850 records on endless loop magnetic tape cartridges.

Data Processing

Current meter data processing was done at Woods Hole Oceanographic Institution (W.H.O.I.), TP data processing by Prof. Wunsch's data processors at the Massachusetts Institute of Technology (M.I.T.).

The data on the current meter cassettes and cartridges were transcribed to 9-track computer compatible tapes, converted to scientific units, edited to remove launch and retrieval transients, and linearly interpolated across missing or erroneous data cycles.

The data are identified by a mooring number (here 623-632, 648, 649), a sequential instrument position numbered from the top of the mooring down (e.g., 6481 is the top instrument on mooring 648), a letter to indicate the data version (e.g., 6481B has been through two editing steps; \$ indicates the record required no editing), and a number to indicate the data interval in seconds for that version (e.g., 6481B900 is the 15 minute (or 900 second) basic data series). 1H after the letter would indicate a one-hour averaged version, 24 GAU indicates a 24 hour subsampled version of a Gaussian filtered (24 hour half width) series.

Data Quality

Table 2 contains a list of record numbers in which the instruments malfunctioned and an indication of the problem.

In general the VACMs behaved very well. Out of 13 instruments there was only one malfunction, a tape recorder failure.

Out of 23 850 current meters, 10 returned good records. The other 13 experienced a variety of problems, a few of which resulted in complete loss of data.

A total of 34 TPs was deployed; 15 of these returned good data; 8 appear to have a long term drift in pressure over the length of the record although 6 of these remain within sensor specifications. In two pressure records the drift rate changed rather abruptly part way through the record. A variety of problems was involved in the other eleven malfunctions.

TABLE 2
INSTRUMENT PROBLEMS

Data Name	Instrument	Problem
6235	TP	Minor pressure drift
6236	TP	No data
6237	850	Short, bad temperature
6238	TP	Minor pressure drift
6245	850	Short-channel A
6252	TP	Minor drift in pressure
6255	850	Clock lost 3 hours, temperature malfunction
6261	VACM	Short-tape recorder malfunction
6262	TP	Short
6274	TP	Short, temperature only
6275	850	Temperature only, water in case
6281	TP	No data
6282	850	Clock malfunction-record split into 2 pieces
6283	850	Water in case-rotor stopped 15 April
6284	TP	Minor pressure drift
6285	850	No rotor values 15 August-15 January
6294	TP	Minor pressure drift
6295	850	Clock fast, temperature bad from 1 March
6303	TP	No data
6305	TP	Temperature only
6306	TP	Minor pressure drift, rate decreases
6307	850	No data
6308	TP	Minor pressure drift
6313	850	No compass entire record
6314	TP	Minor pressure drift, rate decreases
6315	850	Bad temperature
6322	TP	No data
6323	850	Short record-rotor died 2 December
6325	850	<u>Very</u> low speeds
6483	TP	Minor pressure drift
6485	TP	Short record
6494	850	Flooded, no data
6495	TP	Short record
6496	TP	Almost no data, not included in this report

Data Presentation

The presentations in this report are time series, progressive vector plots, spectra, mean statistics, histograms and scatter plots. Additional details are below. Presentations for individual data files are presented only in the microfiche portion.

Time Series

The presentations use either the basic series or a 24 hour series. To make the 24 hour series, the basic series is first filtered using a symmetrical running Gaussian filter with a half width of 24 hours. The filtering is sequential and the resultant time series is 48 hours shorter than the input time series. A simple running hat filter is then applied to form a series with one data point per 24 hours, the interval centered on noon.

Variables versus time and current vectors ("stick plots") versus time are presented. The former are based on the basic series, the latter on the 24 hour series.

There are several composite plots containing all the data of a single variable, temperature, for example, from a single mooring or a particular level. The units for each plot are specified in the title. On these composite plots the numbers which appear in several places on the y scale are the reference points for each successive plot. Each occurrence sets a reference for one of the curves with successive appearances of the number referring to the curves in the same vertical order.

Progressive Vector Diagrams

Based on the basic series, the current vectors are placed tail-to-head so as to show the path that a perfect particle in a perfectly homogeneous fluid would have traveled. The plots are useful for giving an idea of flow regimes and low frequency behavior. Symbols denote the beginning of a month.

Spectra

The horizontal kinetic energy (HKE) and (where available) the temperature series are displayed as spectra computed from the basic series.

The horizontal kinetic energy spectrum is half the sum of the spectra of the east and north components: it has the advantage of not being tied to a particular coordinate system.

The HKE and temperature spectra have units of $(\text{cm}^2/\text{sec}^2)/\text{cph}$ or $(^\circ\text{C})^2/\text{cph}$, respectively. The spectra are all one-sided, i.e., the area under the spectrum is equal to the variance of the original record. The spectra are presented as log-log plots ("not variance preserving").

The VACM spectra are all calculated based on averaging across four data segments of 4000 points each, followed by frequency-band averaging across three frequencies with a recording interval of 900 s. This gives a lowest frequency of $(666.7\text{h})^{-1}$ and a highest frequency of $(0.5\text{h})^{-1}$. The 850 spectra are based on averaging across a single data segment of up to 4000 points, followed by frequency band averaging across eight frequencies. With a recording interval of 1800 s this gives a lowest frequency of as low as $(500 \text{ h})^{-1}$ and a maximum frequency of $(1 \text{ h})^{-1}$. No data windowing or prewhitening has been done on the initial cluster setting but data from the site mooring (648, 649) were prewhitened.

TIMSAN, the W.H.O.I. program (Hunt, 1977) used to produce the spectra, additionally averages the spectra in increasing groups at the higher frequencies to prevent having to plot thousands of points; this gives few degrees of freedom (d.o.f.) at the lowest frequencies, many at the highest frequencies. For spectra calculated from 4 pieces with 3 frequencies averaged, there are 24 d.o.f. in the 30 lowest frequencies and 1200 d.o.f. in the two highest frequencies; the 95% confidence limits corresponding to these two extremes are (.61, 1.94) and (.97, 1.03).

Mean Statistics

The statistics for each variable for the time period shown are given for the basic series, also the east and north covariance, correlation, and vector statistics.

For reference note that a Gaussian random variable would have a kurtosis of 3 and a skewness of zero.

References

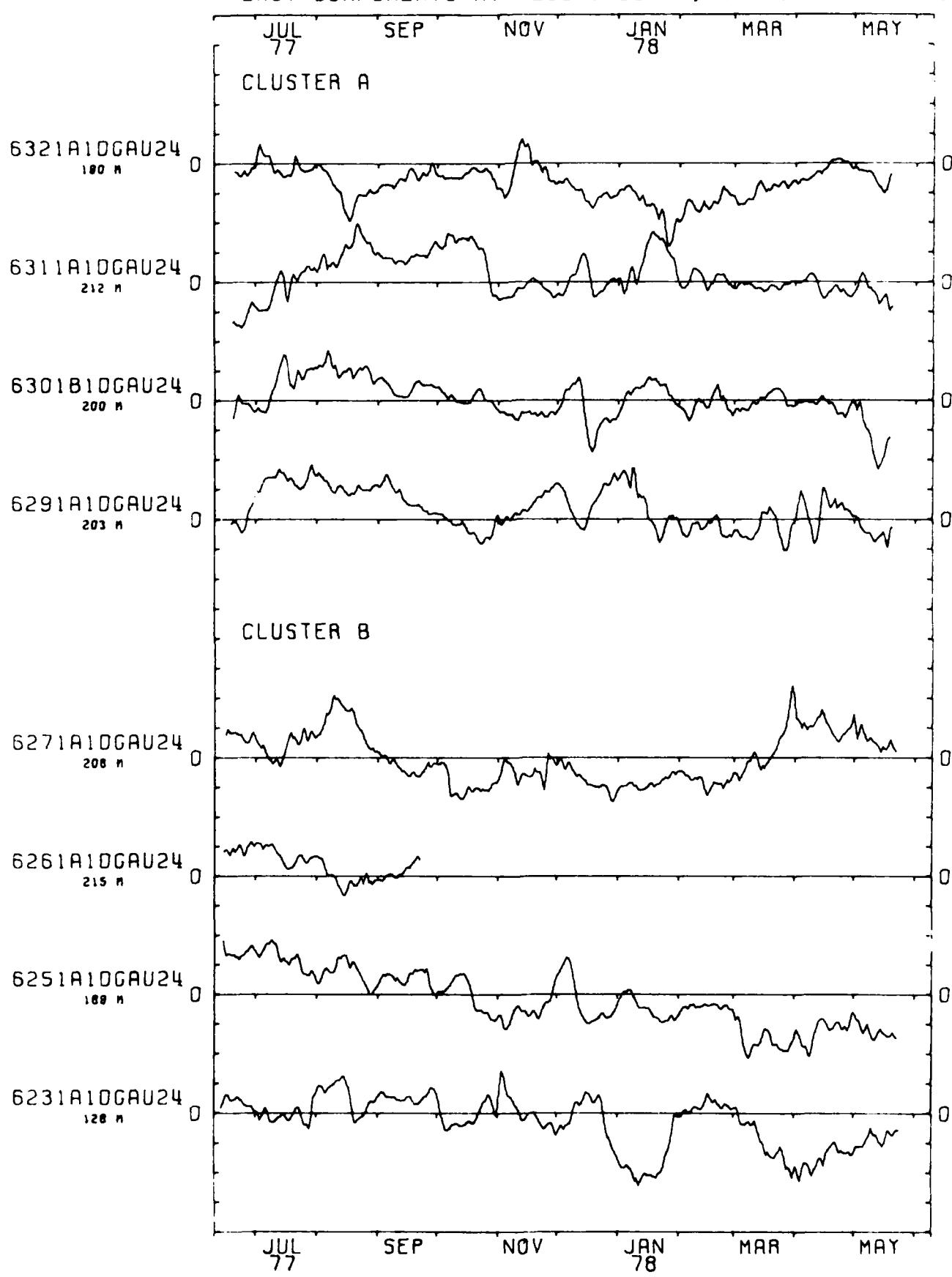
Hunt, M., 1977, A program for spectral analysis of time series. Woods Hole Oceanographic Institution Technical Memorandum W.H.O.I. 2-77.

Payne, R. E., A. L. Bradshaw, J. P. Dean and K. E. Schleicher, 1976, Accuracy of temperature measurements with the VACM. Woods Hole Oceanographic Institution Technical Report W.H.O.I. 76-94.

Wunsch, C. and J. Dahlen, 1974, A moored temperature and pressure recorder. Deep-Sea Research, 21, 145-154.

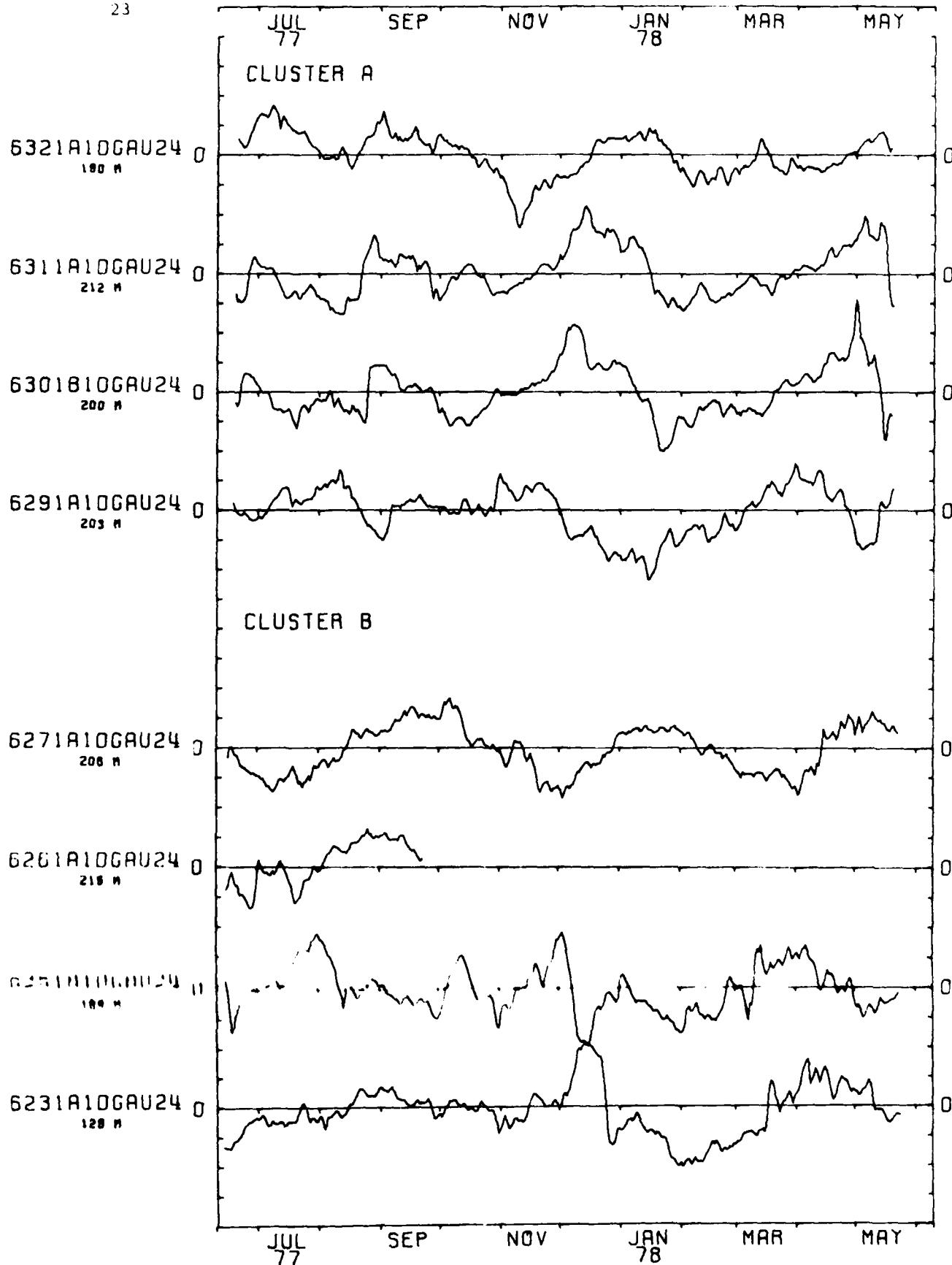
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EAST COMPONENTS AT 200M. DEPTH, UNITS OF 10 CM/SEC

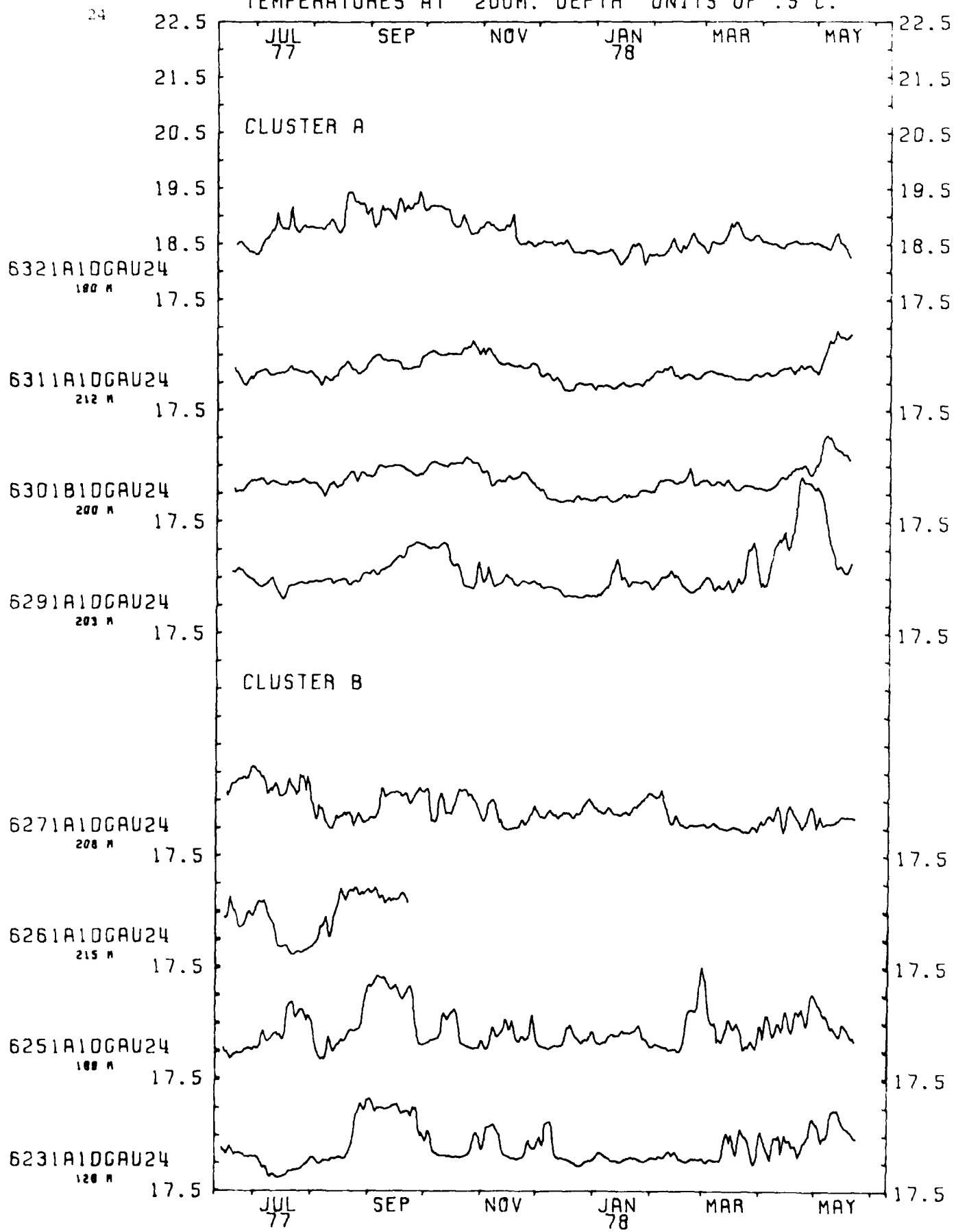


NORTH COMPONENTS AT 200M. DEPTH. UNITS OF 10 CM/SEC

23



TEMPERATURES AT 200M. DEPTH UNITS OF .5 C.



25
NORTH IS UP 200M. DEPTH. UNITS OF 10 CM/SEC

JUN AUG OCT DEC FEB APR
77 78

CLUSTER A

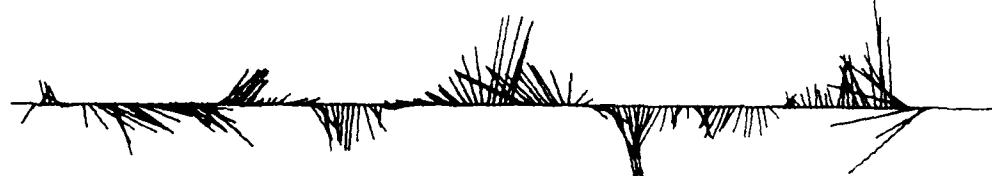
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190 M



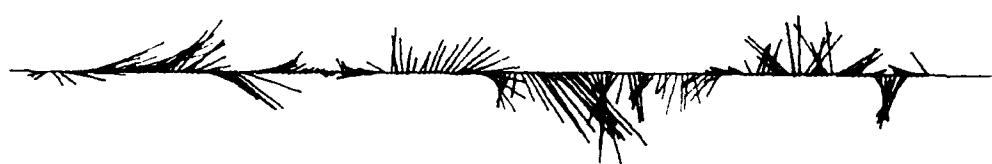
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212 M



6301B1DGAU24
200 M

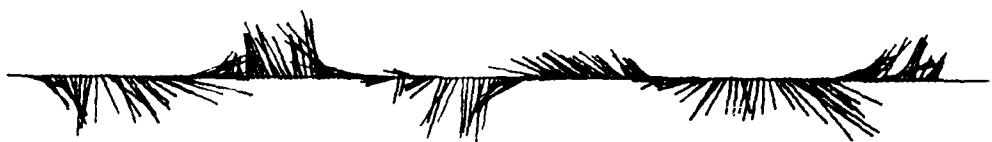


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203 M

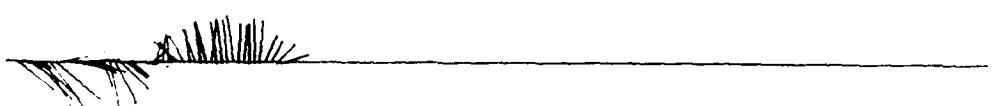


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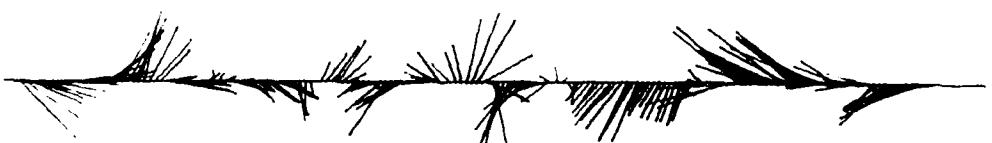
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206 M



6261A1DGAU24
215 M



6251A1DGAU24
189 M

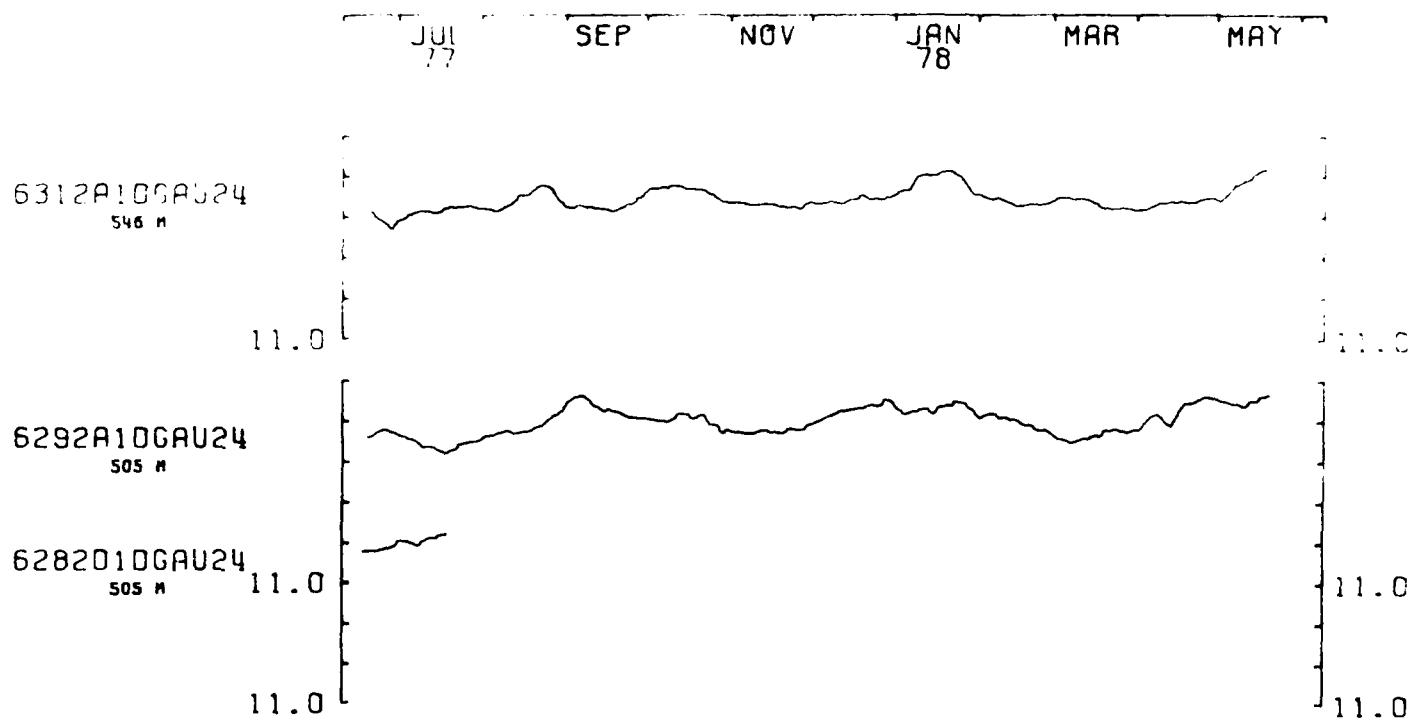


6231A1DGAU24
128 M

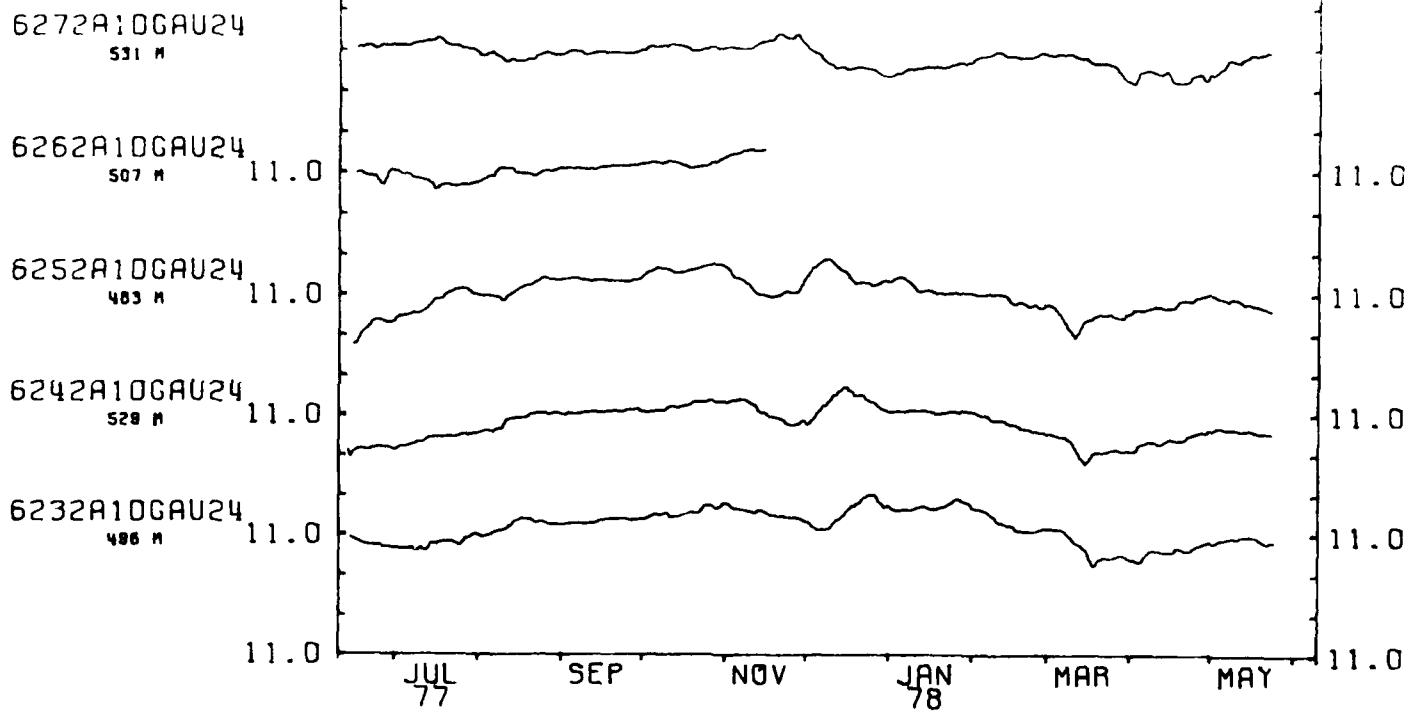


JUN AUG OCT DEC FEB APR
77 78

TEMPERATURES AT 500M. DEPTH UNITS OF 1.0 C.
CLUSTER A

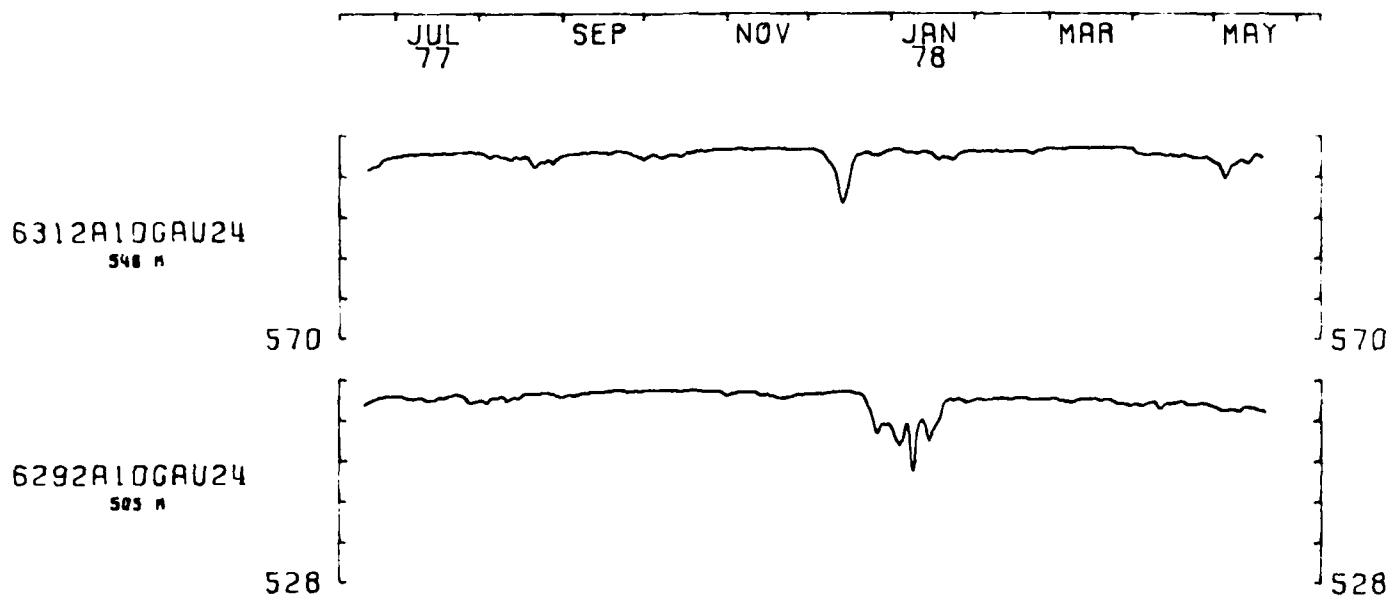


CLUSTER B

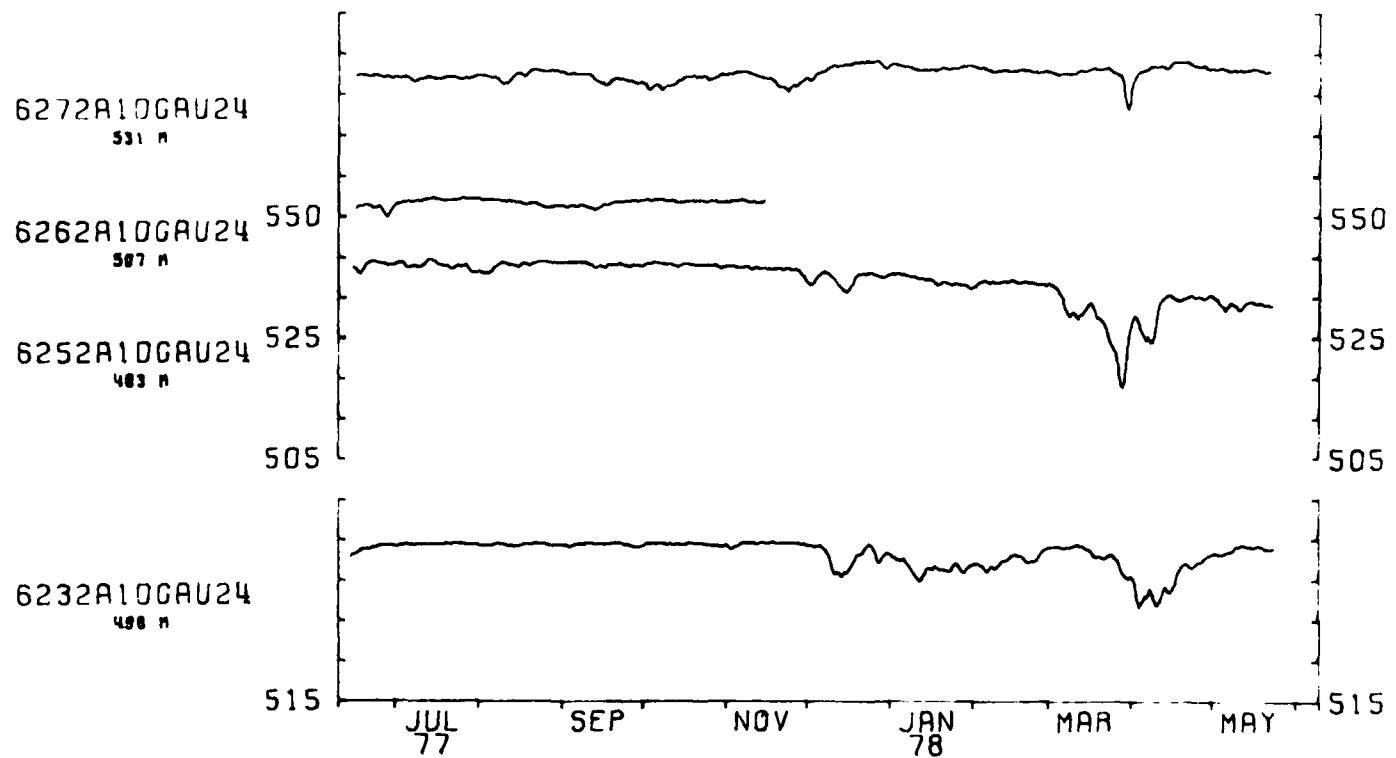


PRESSURES AT 500M. DEPTH UNITS OF 4 OBS.

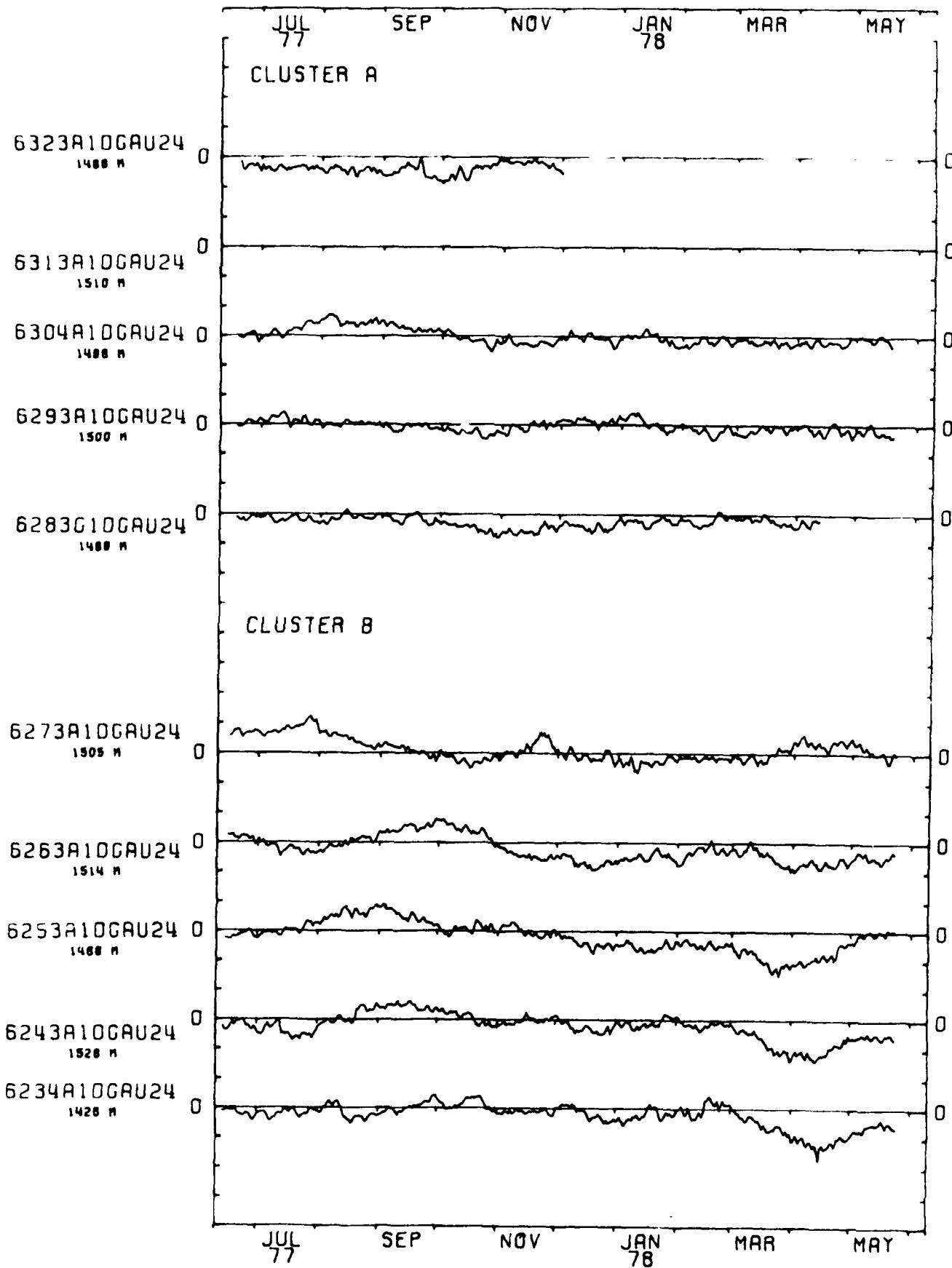
CLUSTER A



CLUSTER B



EAST COMPONENTS AT 1500M. DEPTH, UNITS OF 2.5 CM/SEC



29

NORTH COMPONENTS AT 1500M. DEPTH, UNITS OF 2.5 CM/SEC

JUL 77 SEP NOV JAN 78 MAR MAY

CLUSTER A

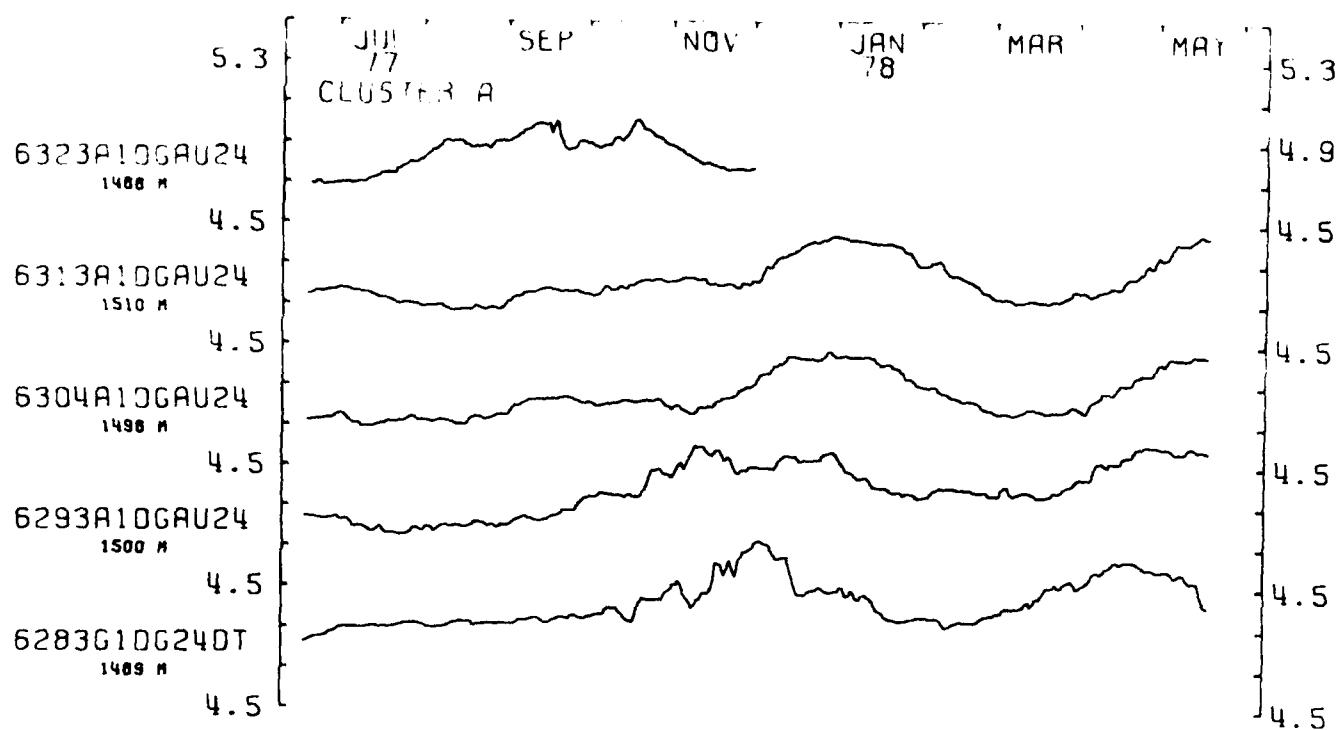
6323A10GAU24
1488 M6313A10GAU24
1510 M6304A10GAU24
1488 M6293A10GAU24
1500 M6283G10GAU24
1488 M

CLUSTER B

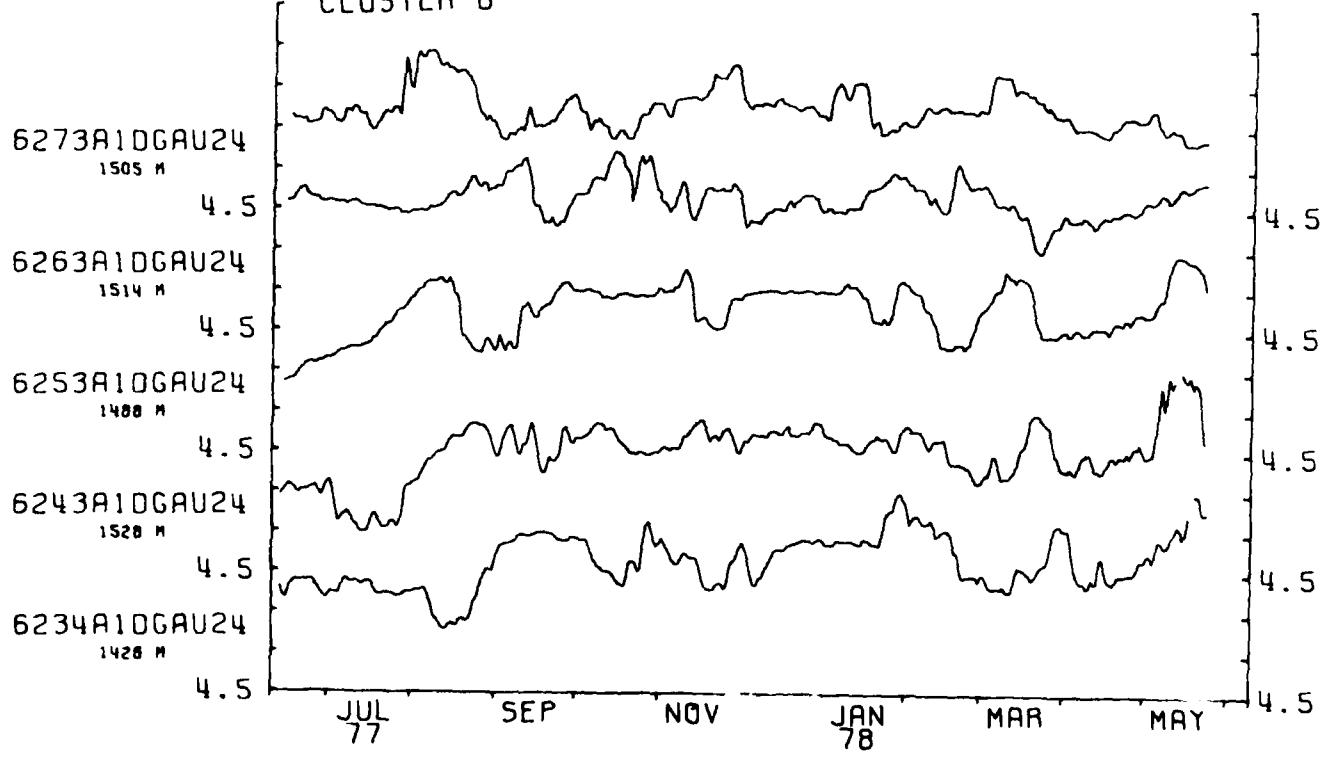
6273A10GAU24
1505 M6263A10GAU24
1514 M6253A10GAU24
1488 M6243A10GAU24
1528 M6234A10GAU24
1426 M

JUL 77 SEP NOV JAN 78 MAR MAY

TEMPERATURES AT 1500M. DEPTH UNITS OF .2 C.



CLUSTER B



31

NORTH IS UP 1500M. DEPTH. UNITS OF 2.5 CM/SEC

JUN AUG OCT DEC FEB APR
CLUSTER A

6323A10GAU24
1488 M



6313A10GAU24
1510 M



6304A10GAU24
1488 M



6293A10GAU24
1500 M



6283G10GAU24
1489 M



CLUSTER B

6273A10GAU24
1505 M



6263A10GAU24
1514 M



6253A10GAU24
1488 M



6243A10GAU24
1520 M



6234A10GAU24
1426 M

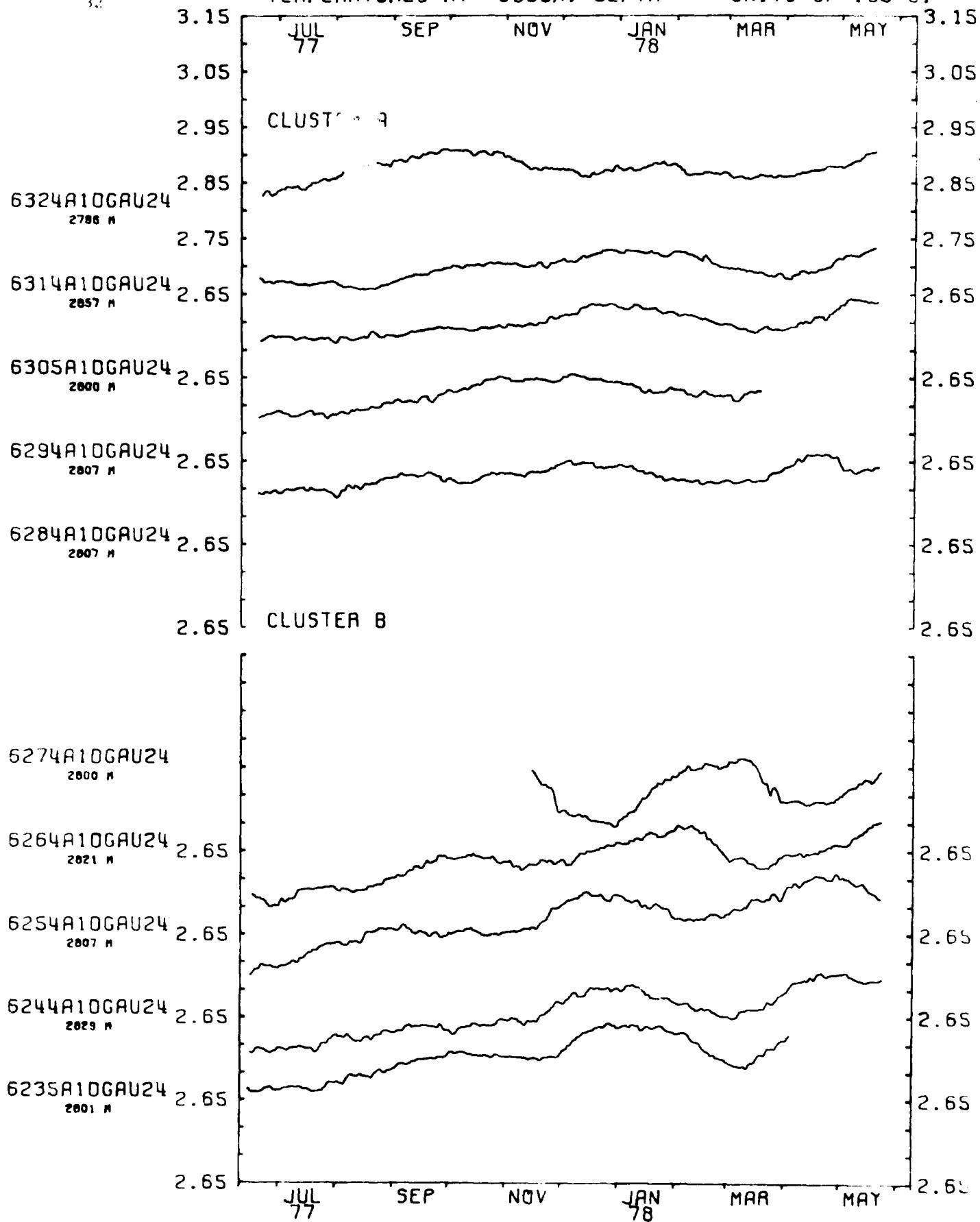


JUN AUG OCT DEC FEB APR
77 78

3

TEMPERATURES AT 3000M. DEPTH UNITS OF .05 C.

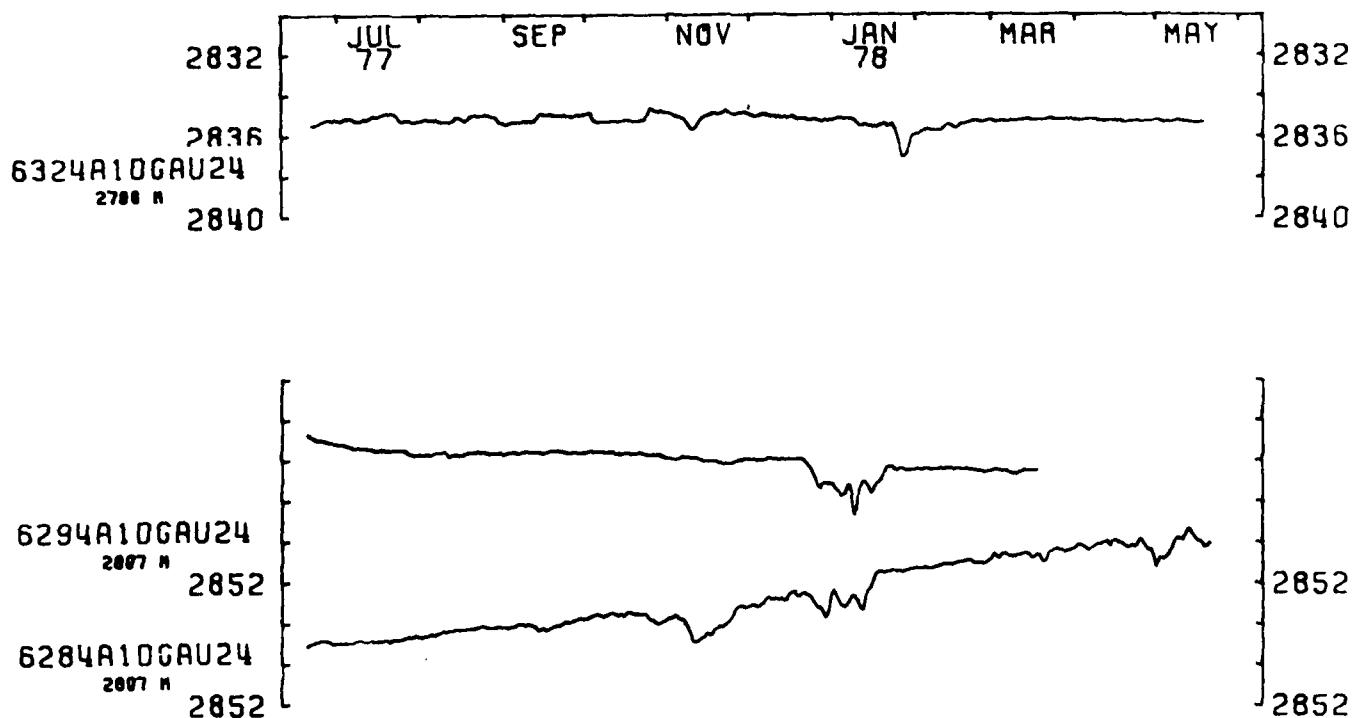
6-16



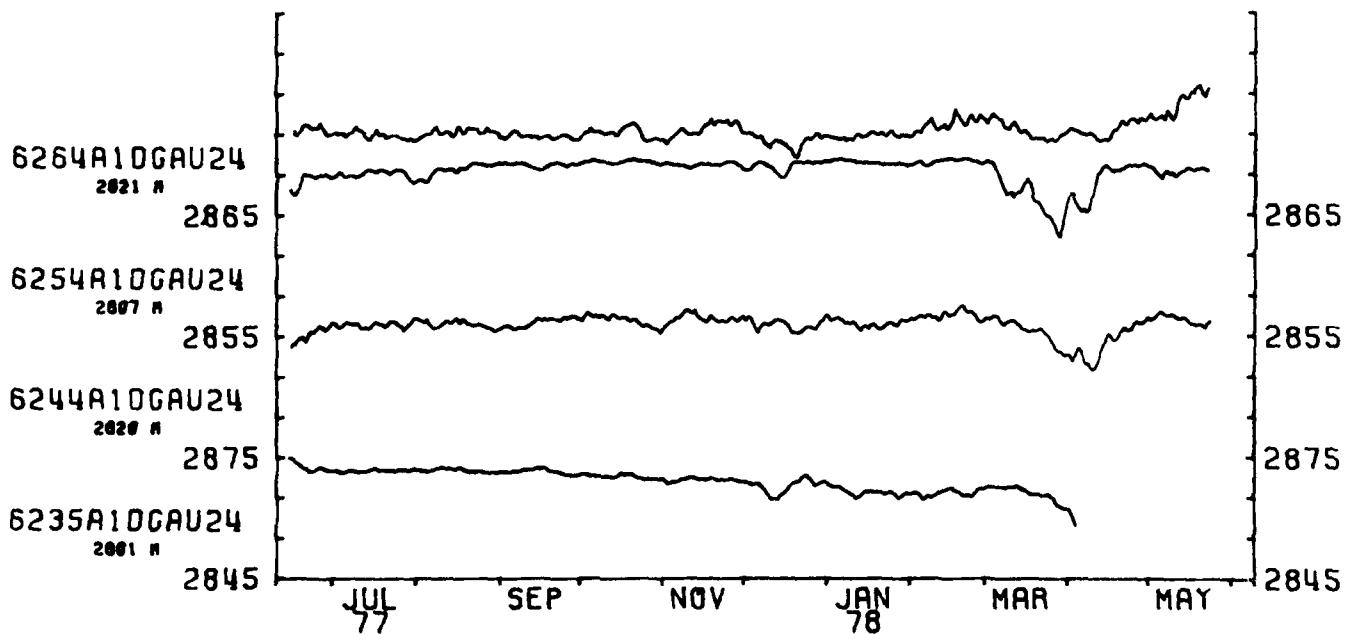
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PRESSURES AT 3000M. DEPTH UNITS OF 2 DBS.

CLUSTER A



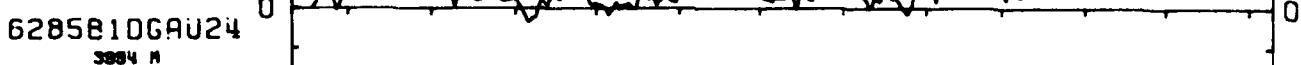
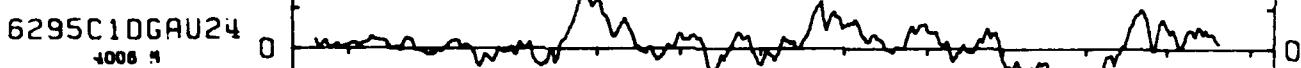
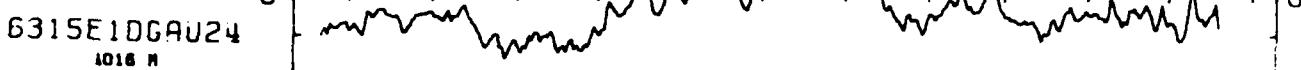
CLUSTER B



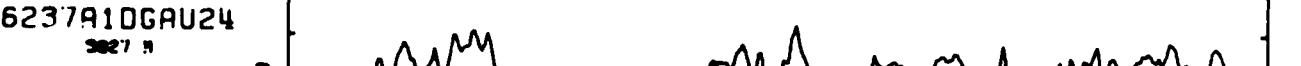
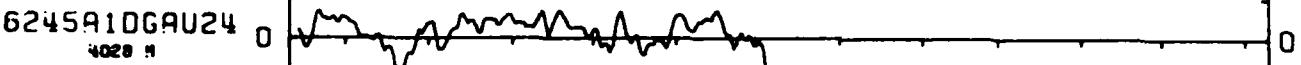
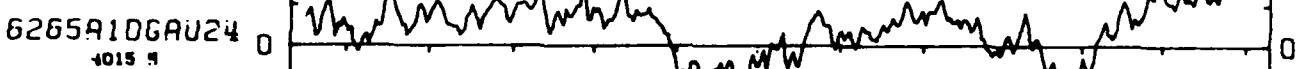
EAST COMPONENTS AT 4000M. DEPTH. UNITS OF 2.5 CM/SEC

JUL SEP NOV JAN MAR MAY
77 78

CLUSTER A

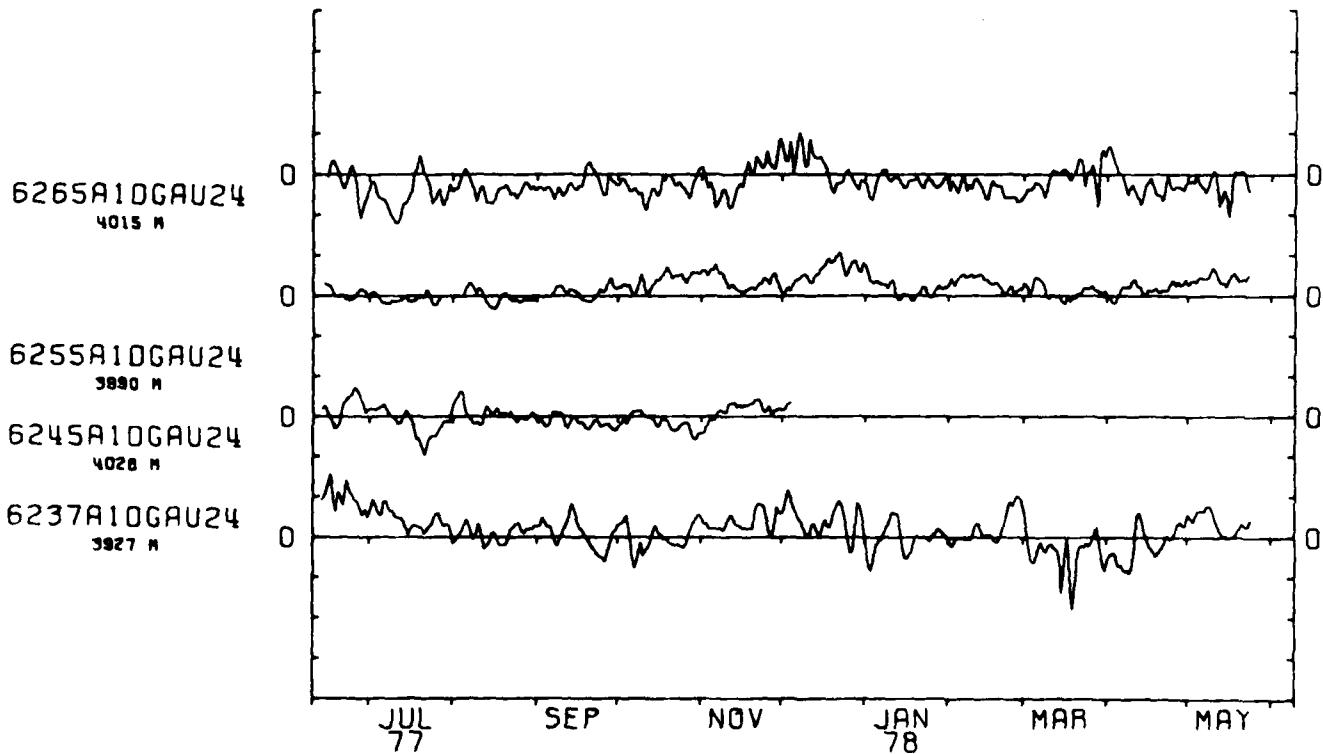
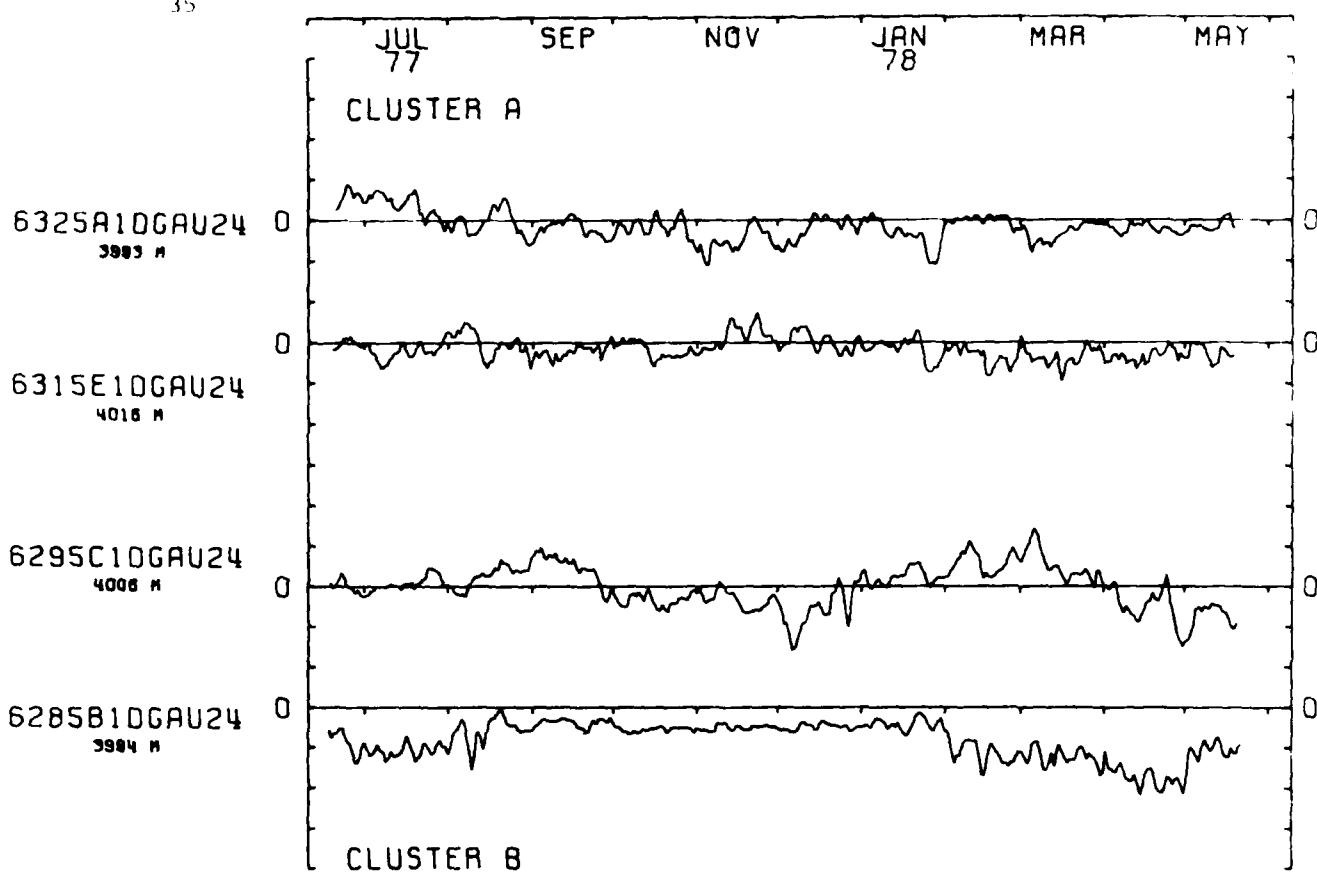


CLUSTER B



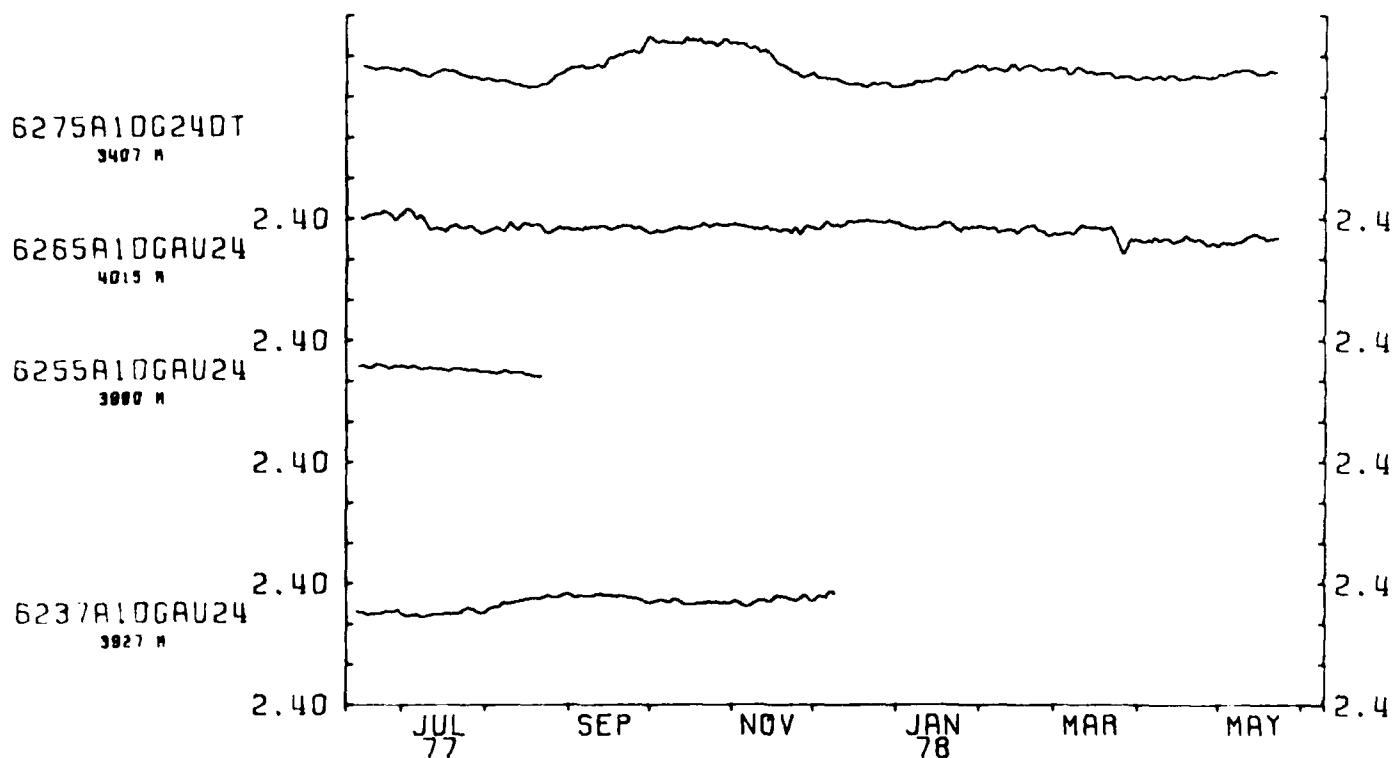
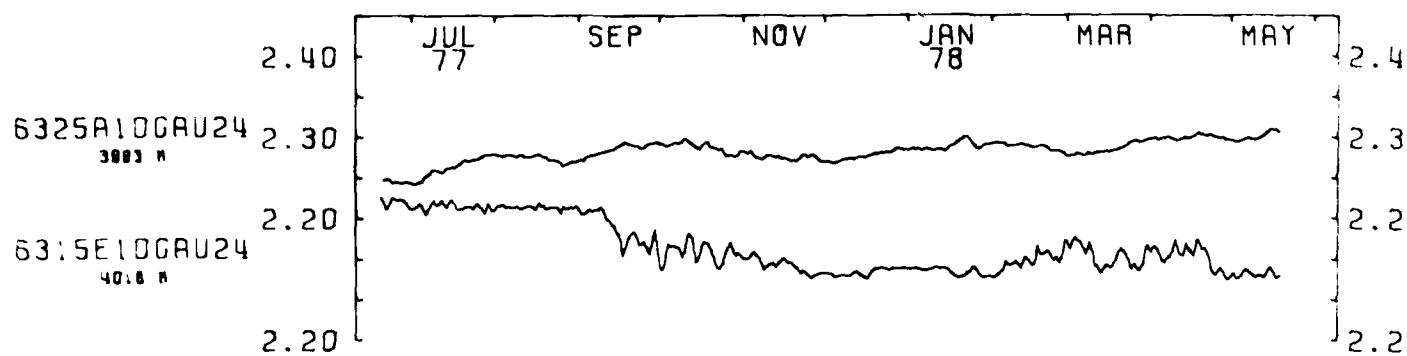
JUL SEP NOV JAN MAR MAY
77 78

NORTH COMPONENTS AT 4000M. DEPTH, UNITS OF 2.5 CM/SEC



TEMPERATURES AT 4000M. DEPTH UNITS OF .05 C.

CLUSTER A

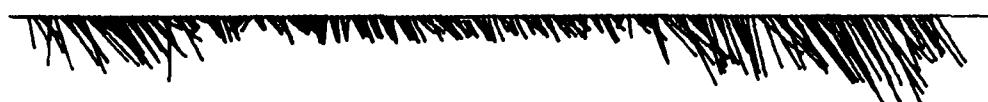


37

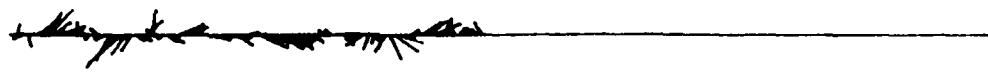
NORTH IS UP 4000M. DEPTH, UNITS OF 2.5 CM/SEC

JUN AUG OCT DEC FEB APR

CLUSTER A

6325A10GAU24
3003 M6315E10GAU24
4018 M6295C10GAU24
4008 M6285B10GAU24
3004 M

CLUSTER B

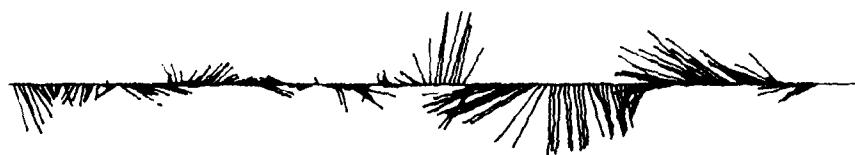
6265A10GAU24
4018 M6255A10GAU24
3000 M6245A10GAU24
4028 M6237A10GAU24
3027 M

JUN AUG OCT DEC FEB APR

MOORING 623 VECTOR UNITS OF 10.2.1 CM/SEC

JUL SEP NOV JAN MAR MAY

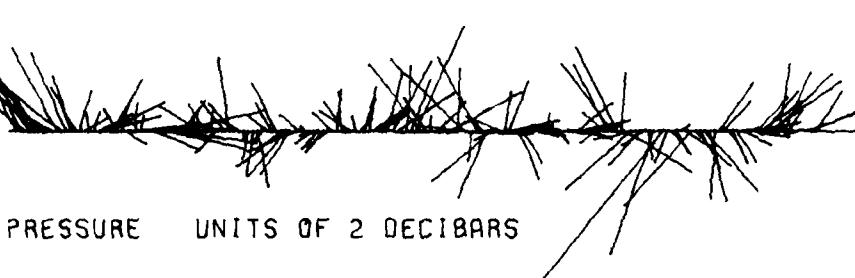
6231A10GAU24
128 m



6234A10GAU24
1426 m



6237A10GAU24
3827 m

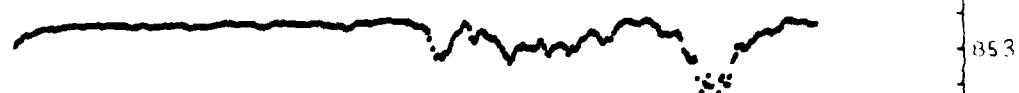


PRESSURE UNITS OF 2 DECIBARS

6232A10GAU24
408 m



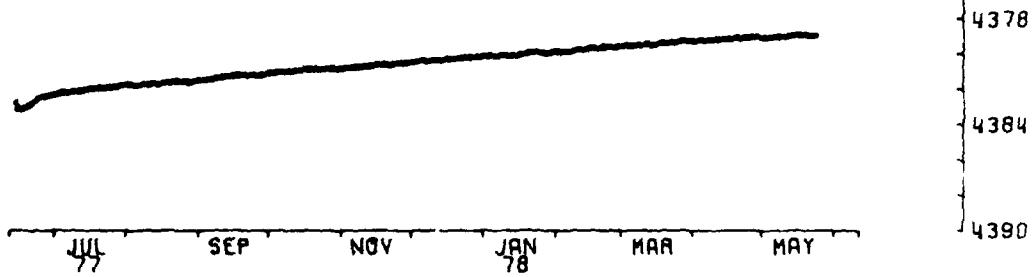
6233A10GAU24
843 m

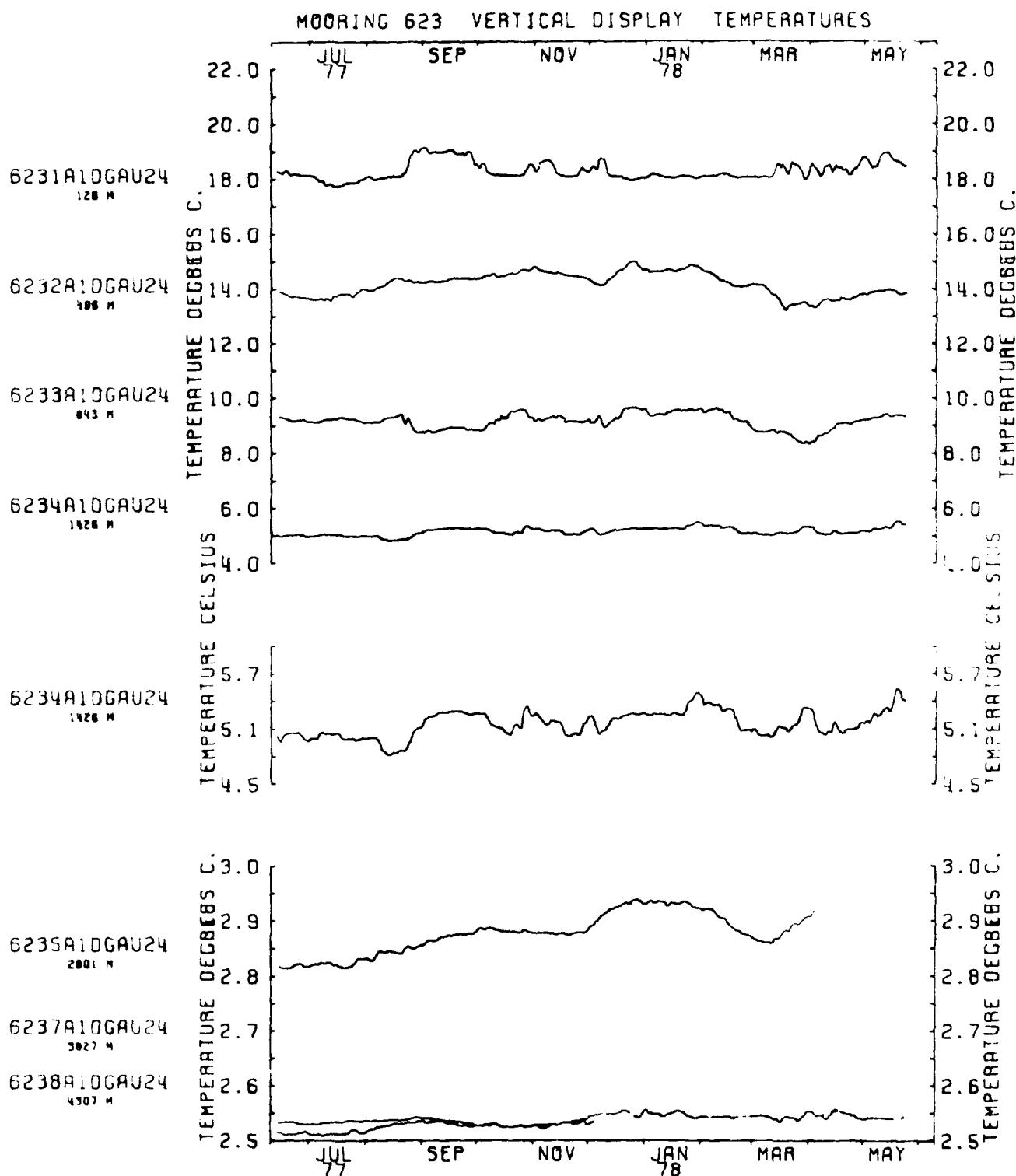


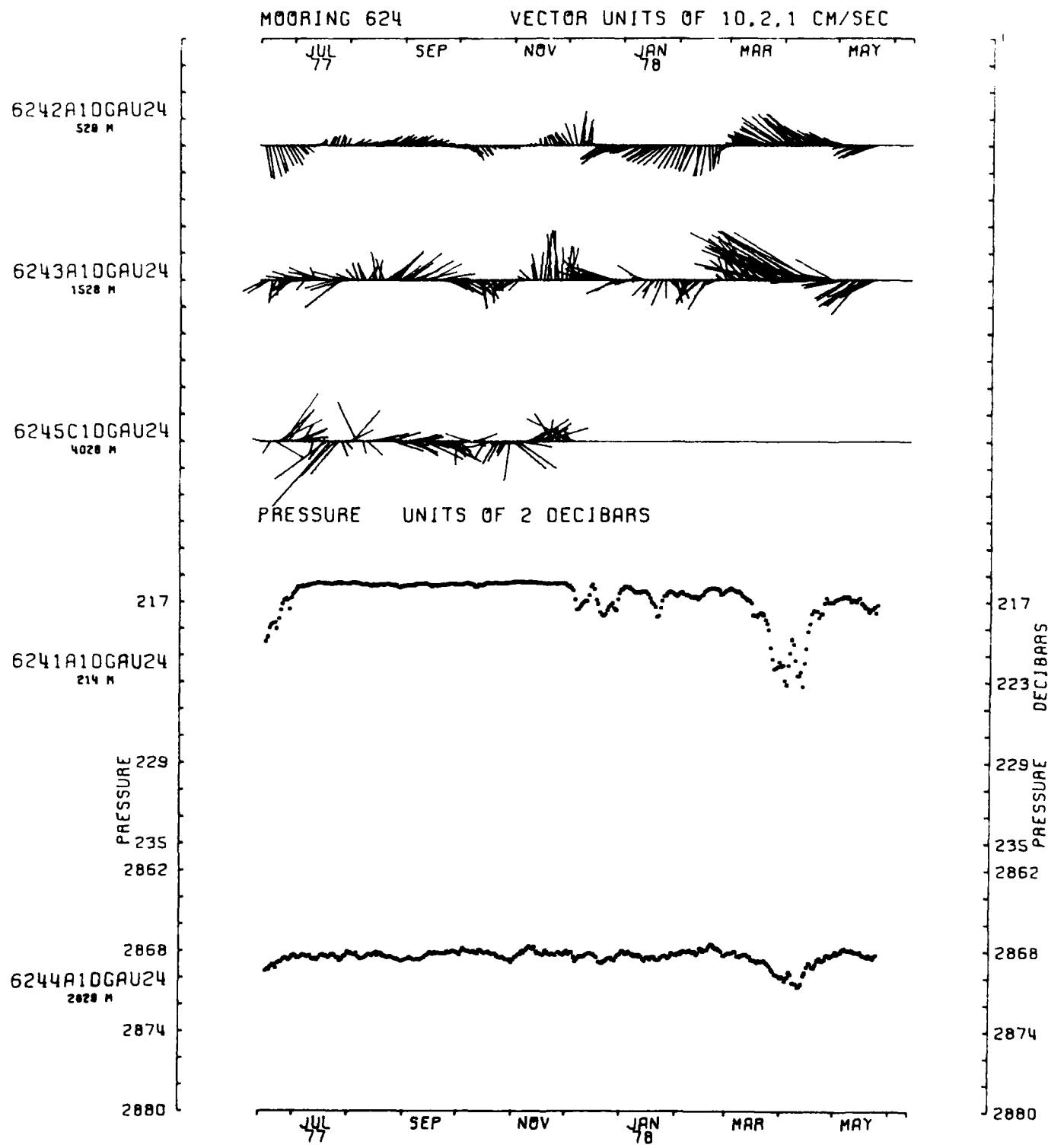
6235A10GAU24
2001 m

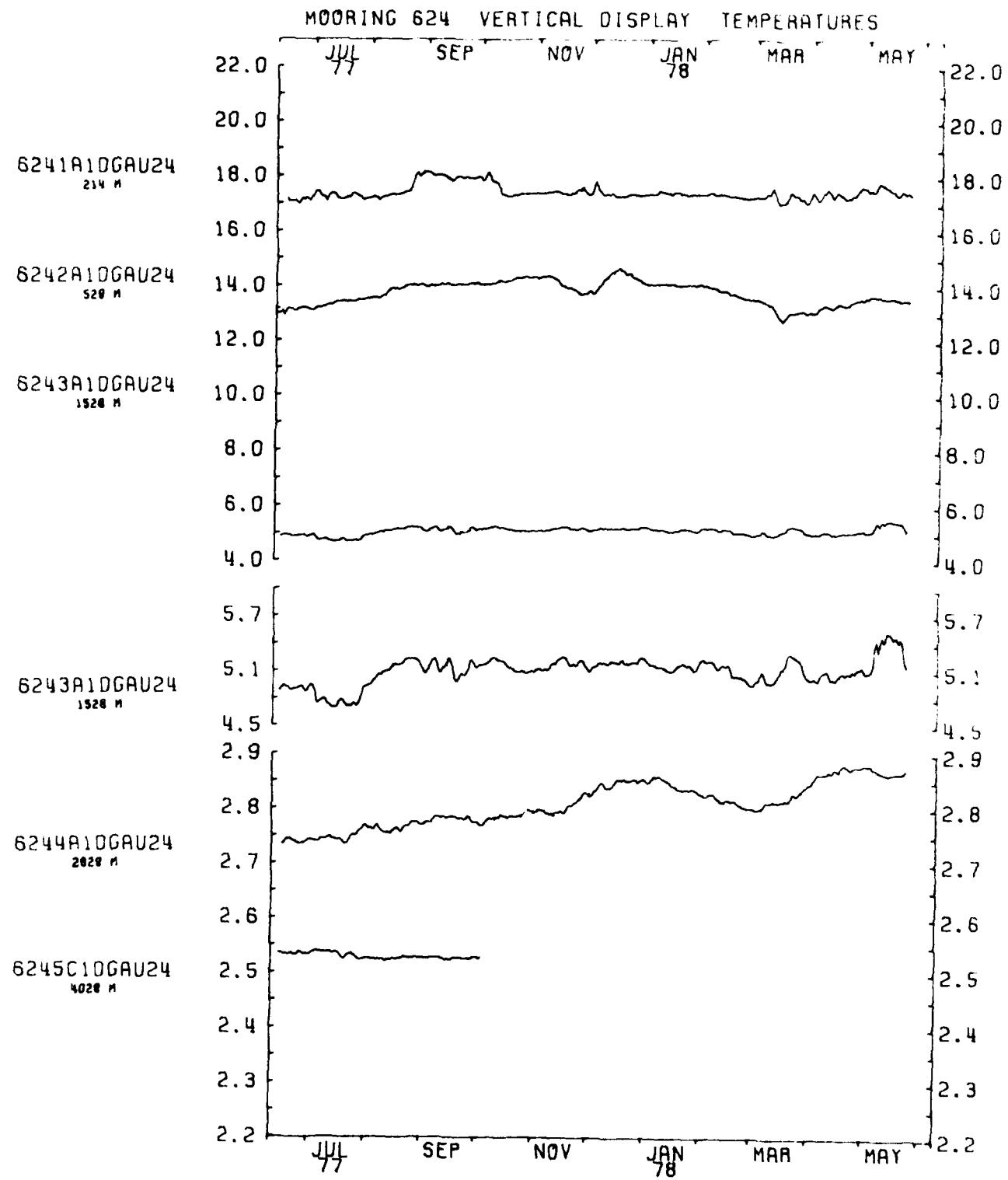


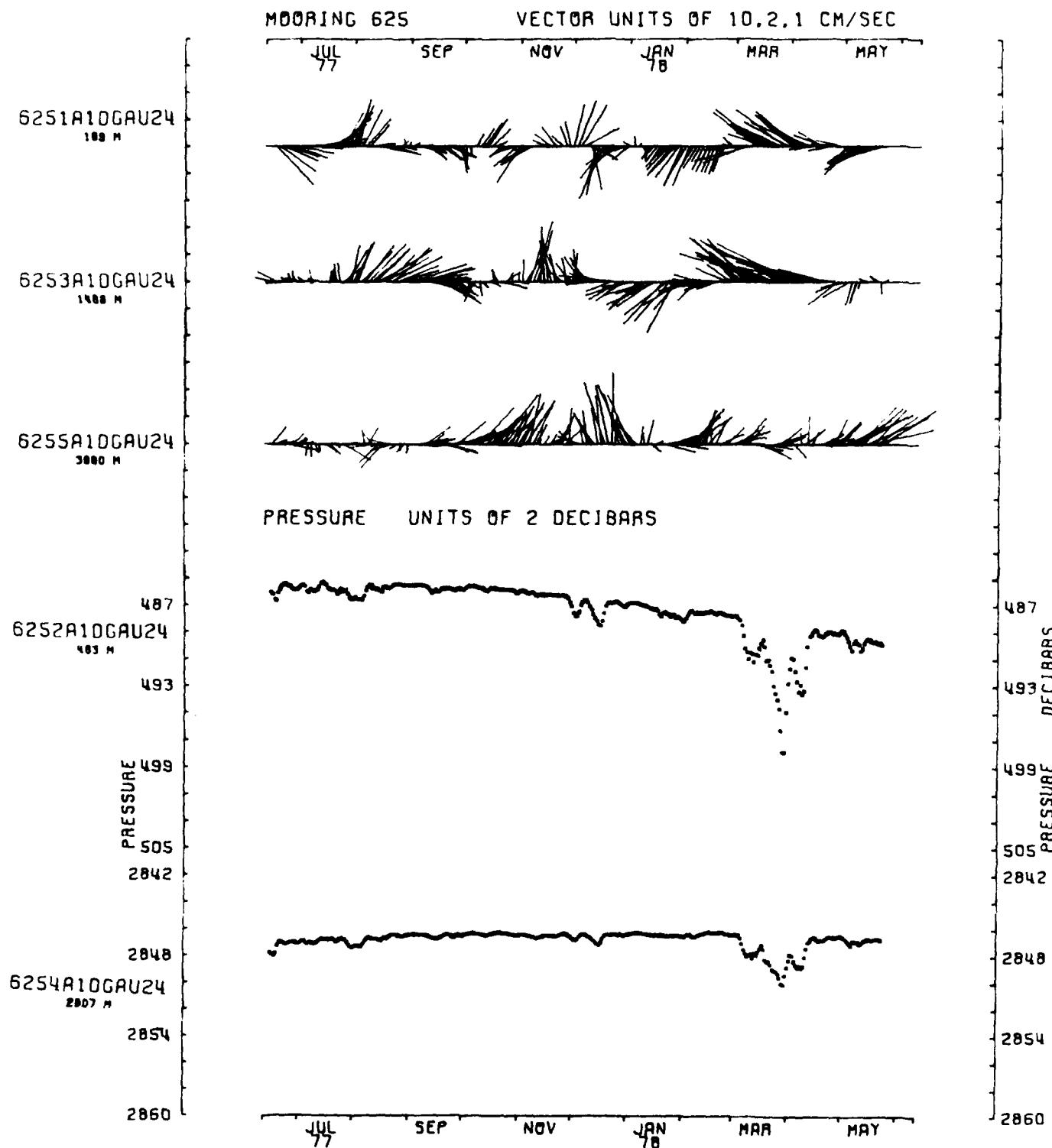
6238A10GAU24
4307 m

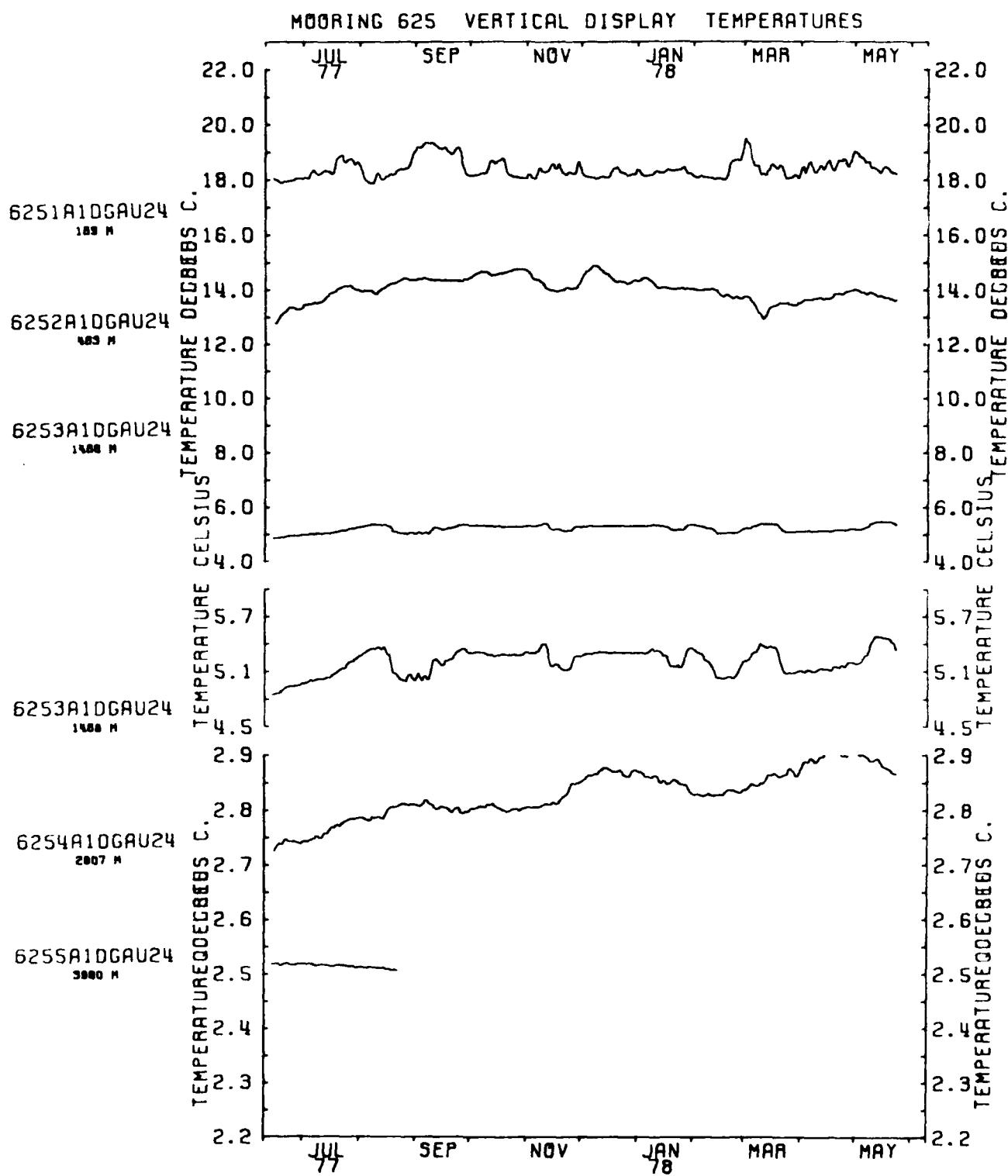


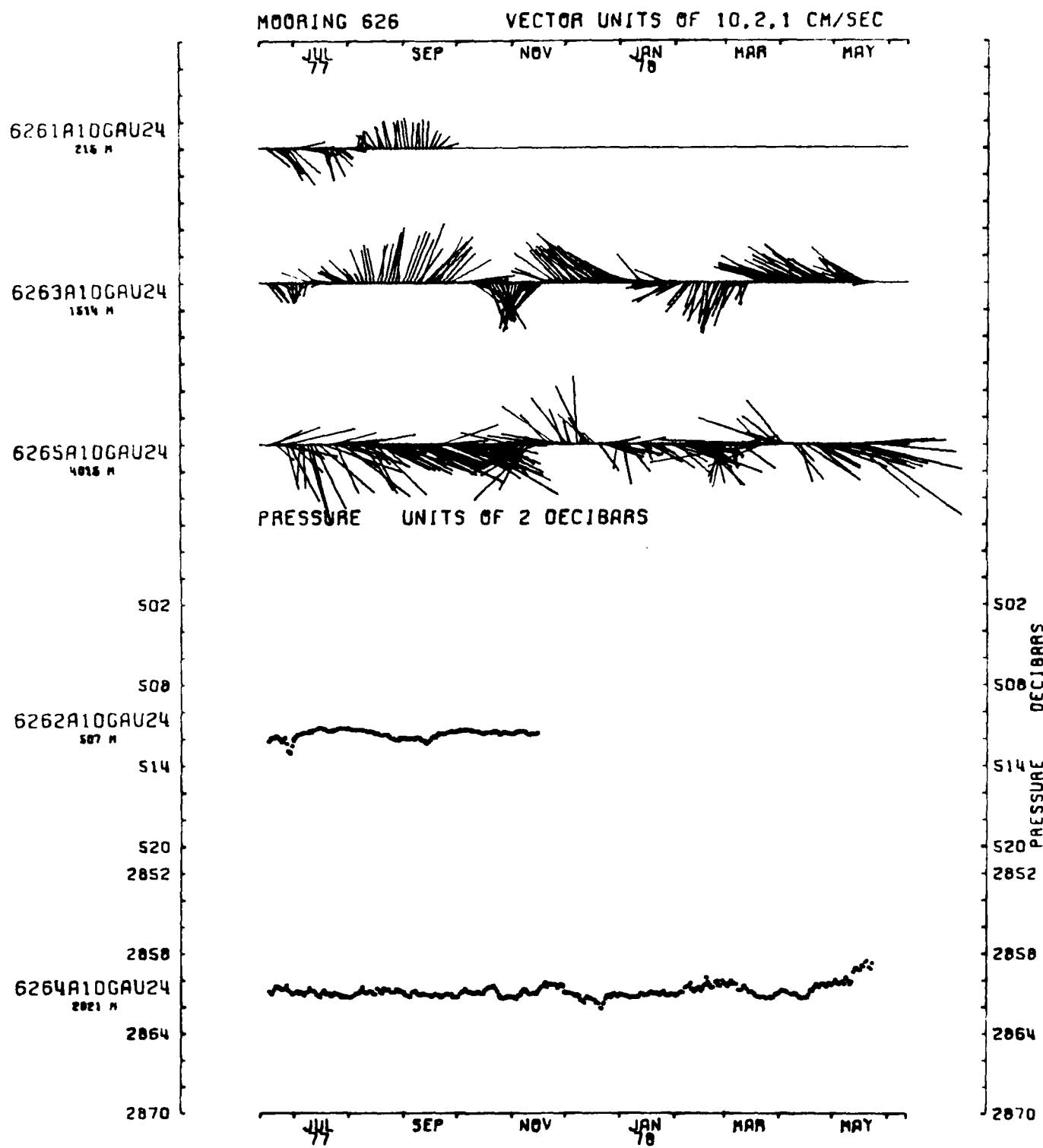


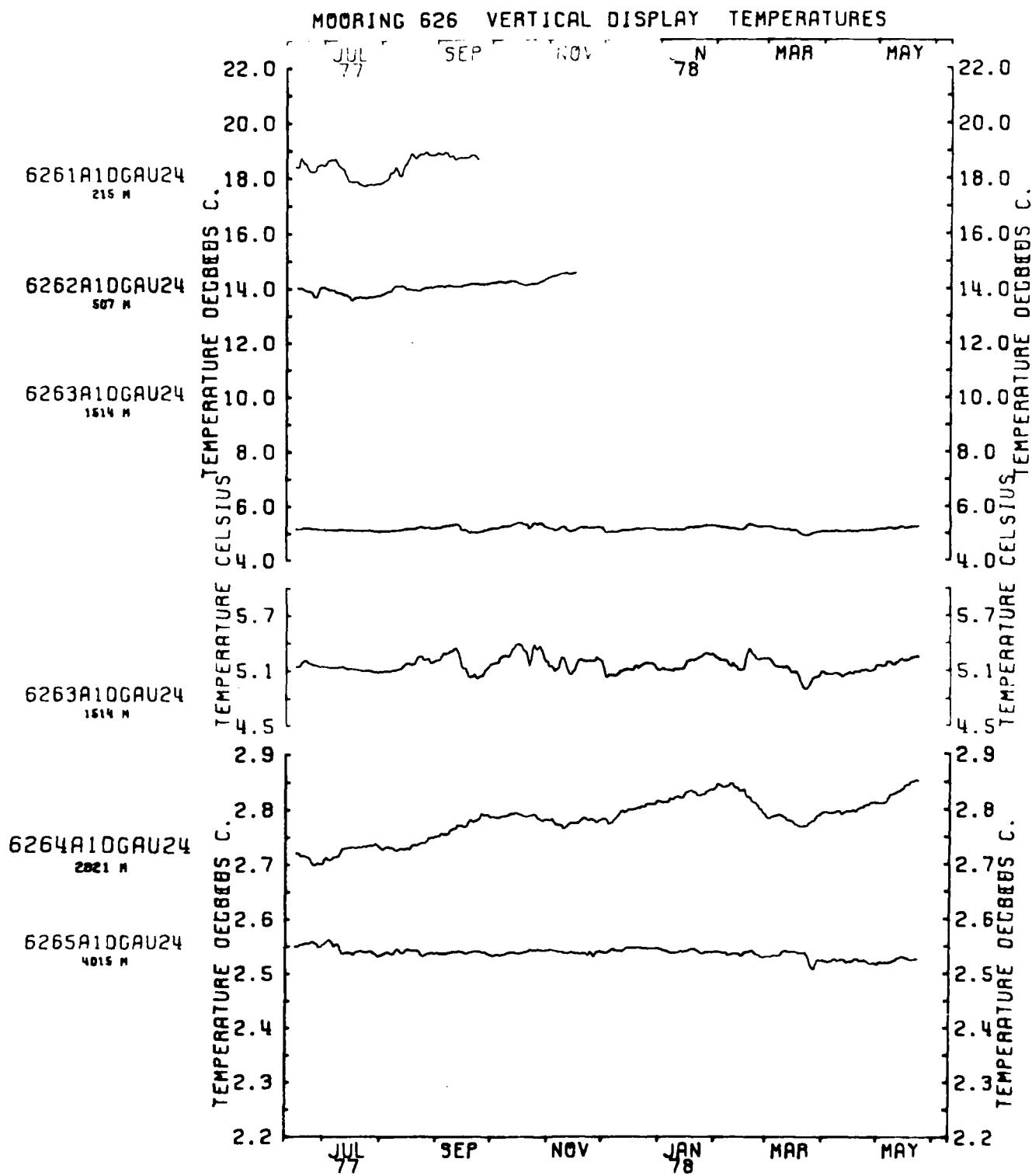




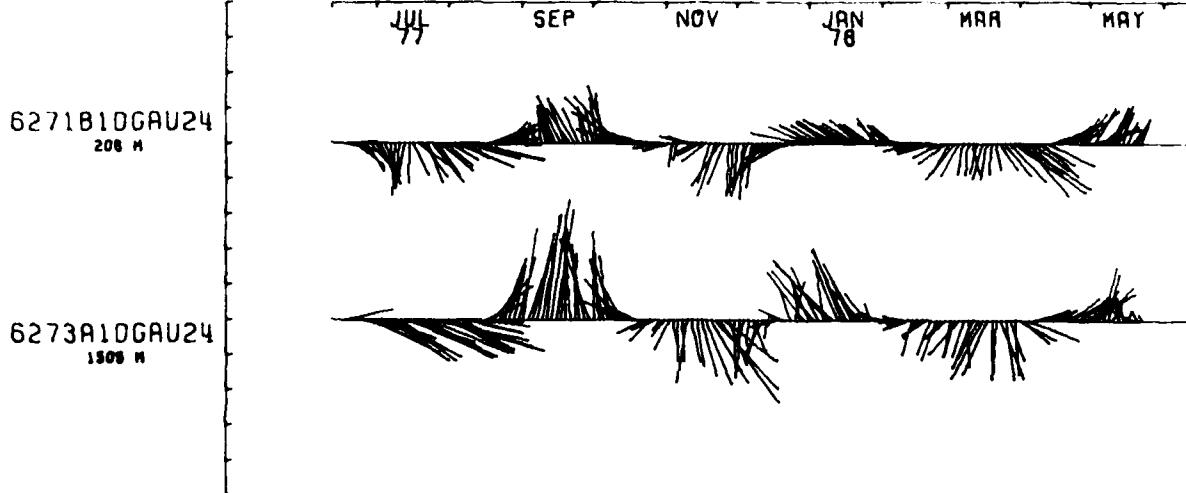




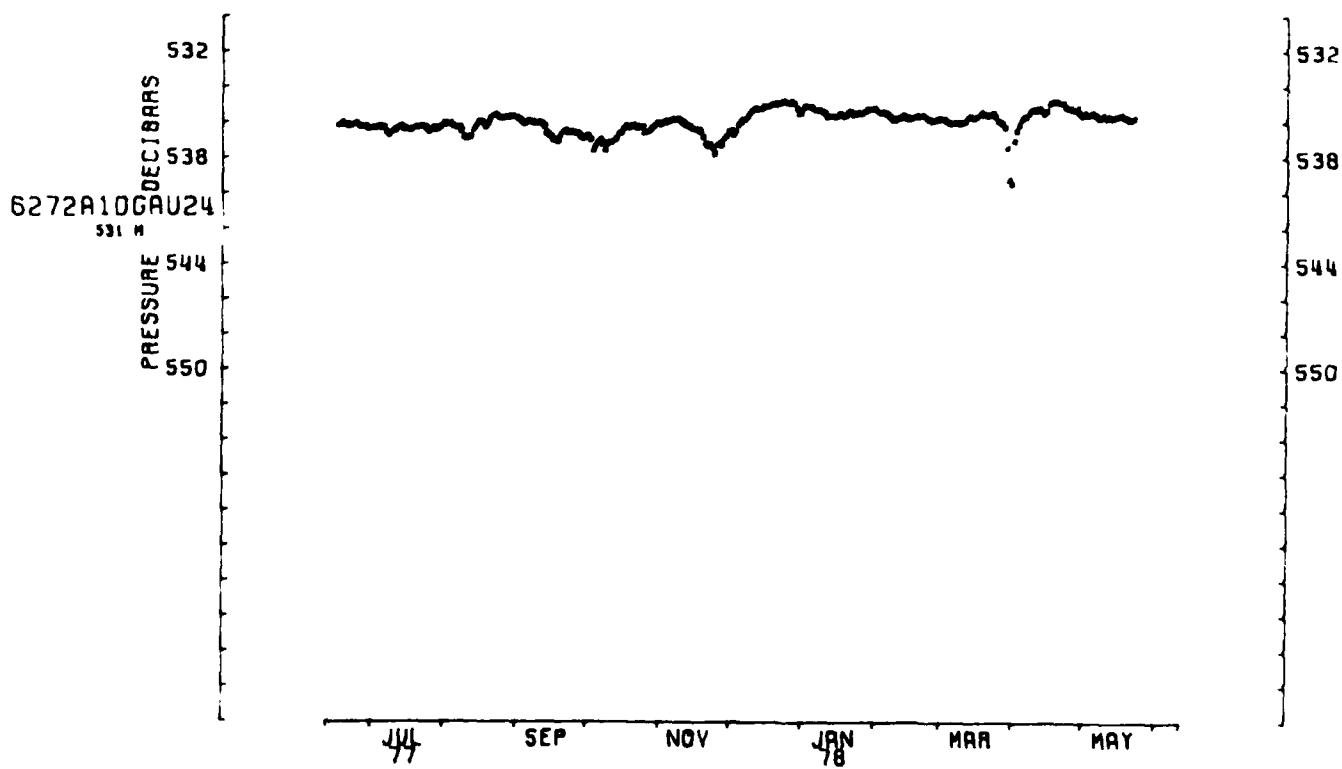


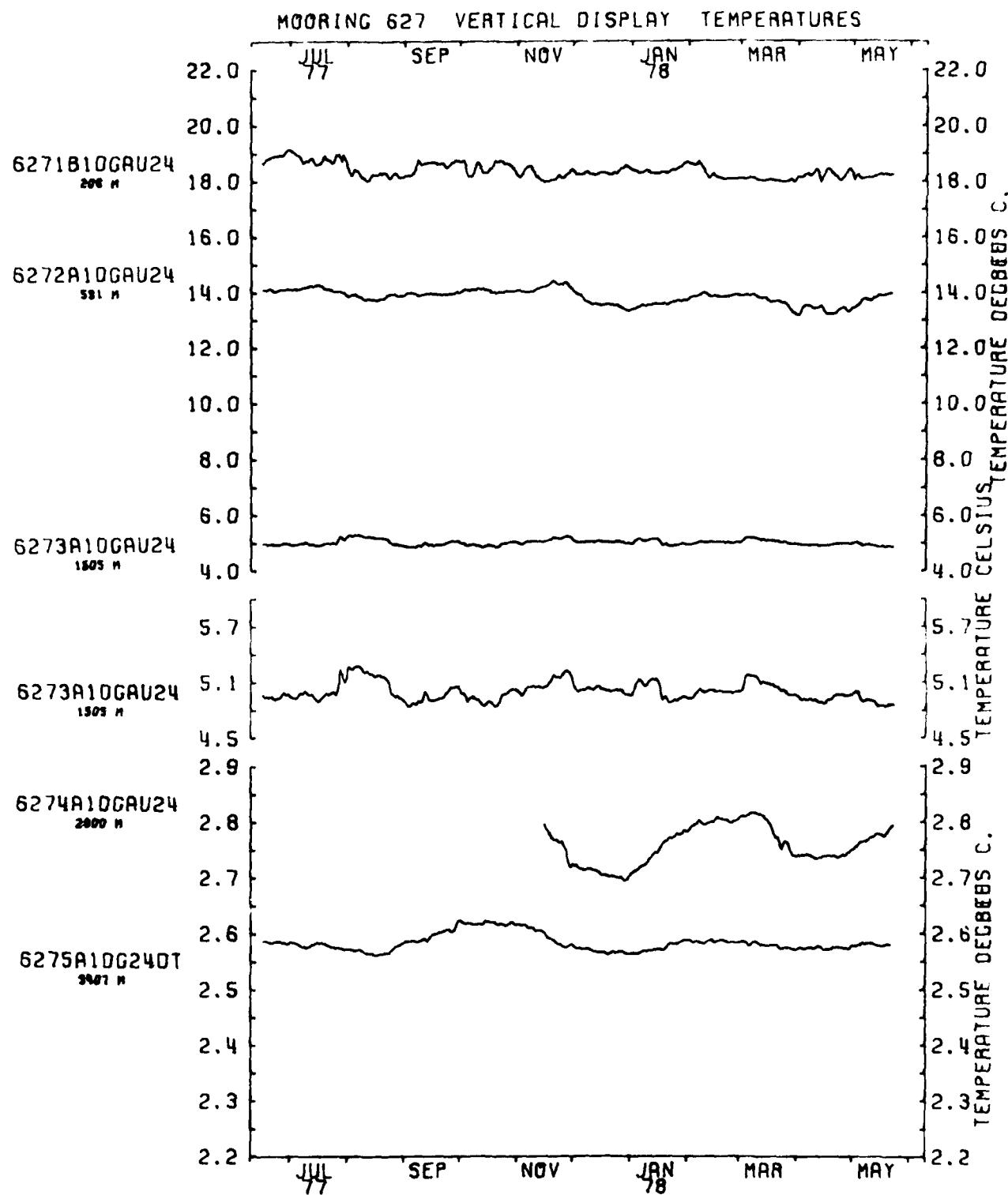


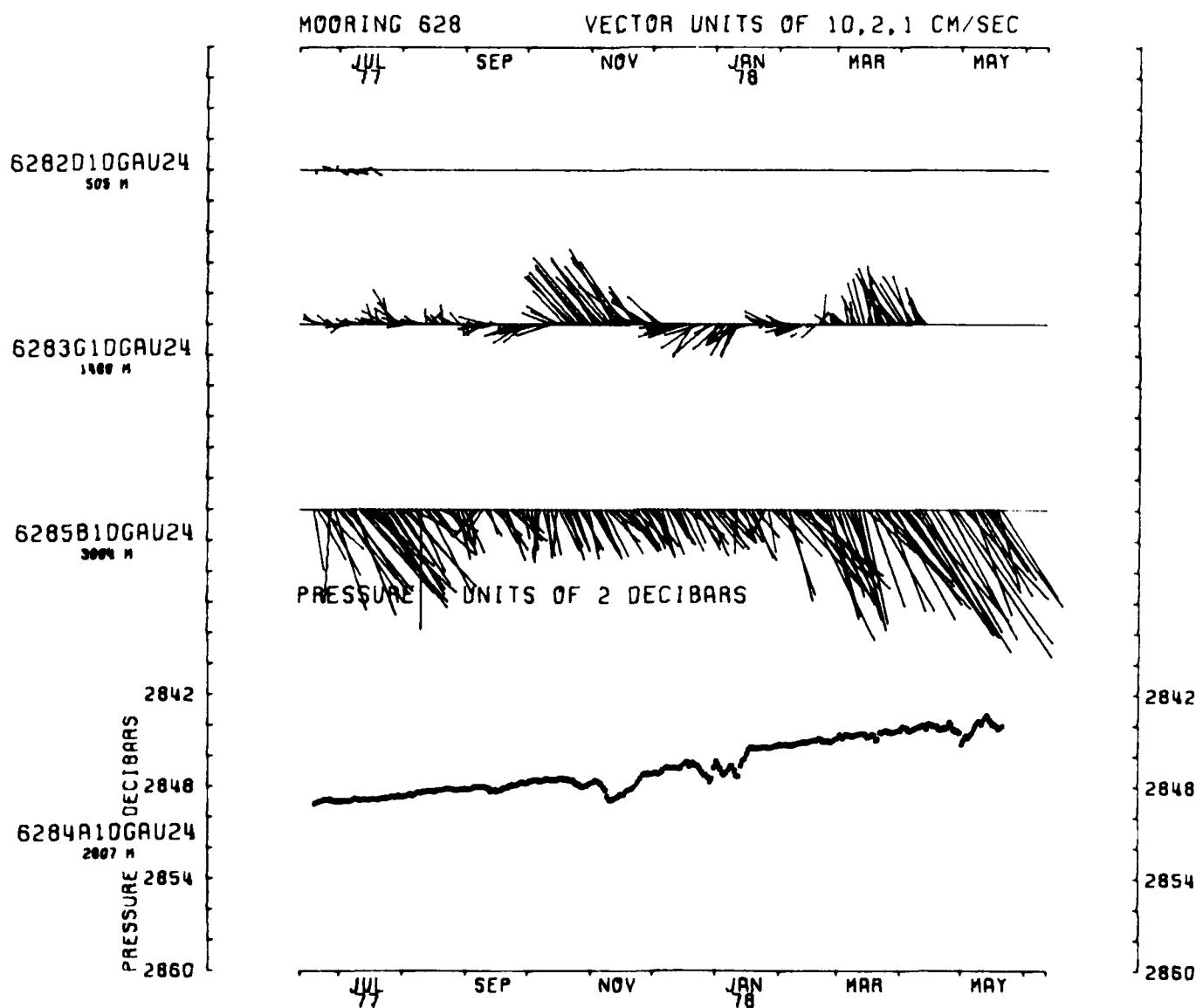
MOORING 627 VECTOR UNITS OF 10.2 CM/SEC



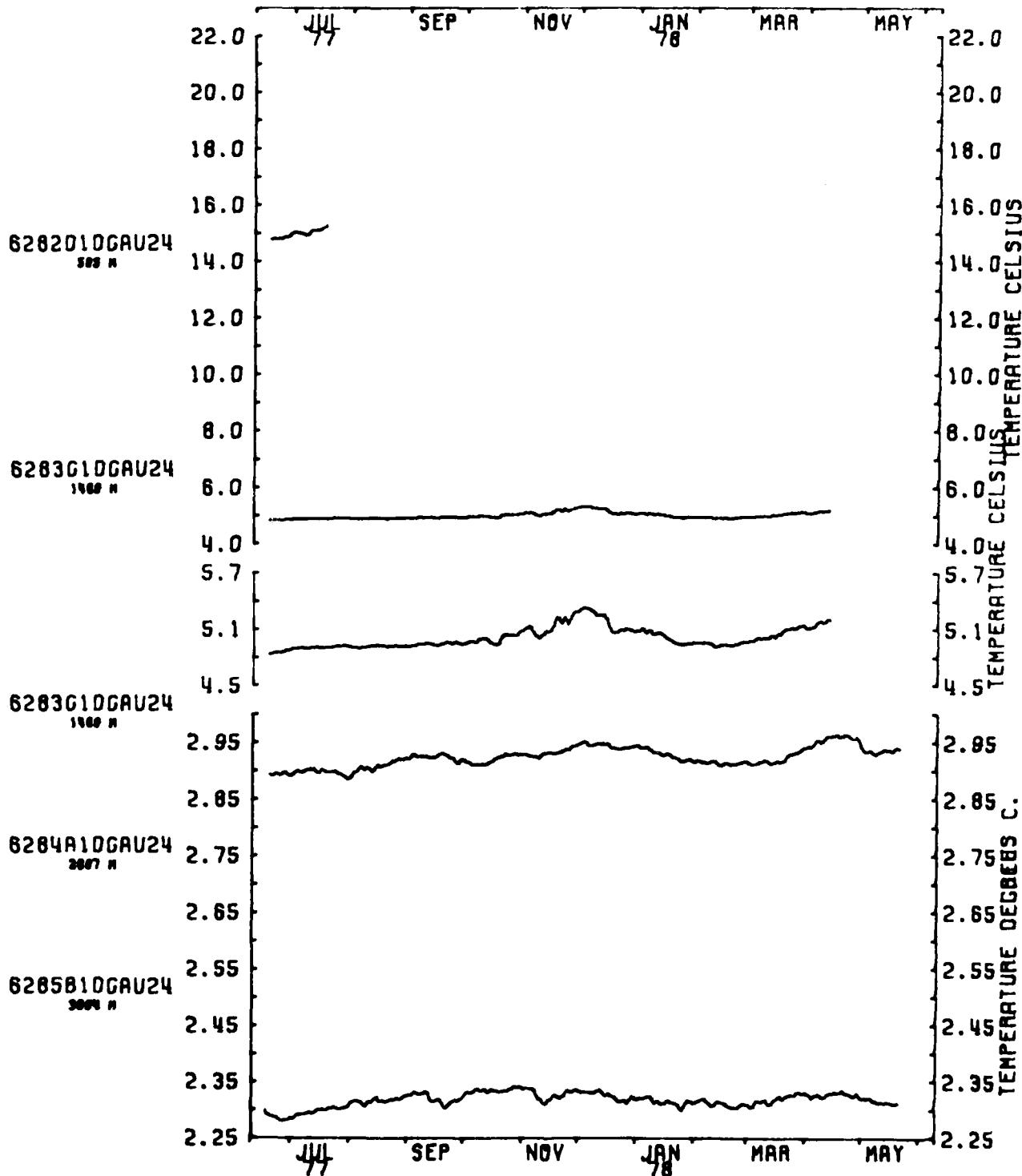
PRESSURE UNITS OF 2 DECIBARS







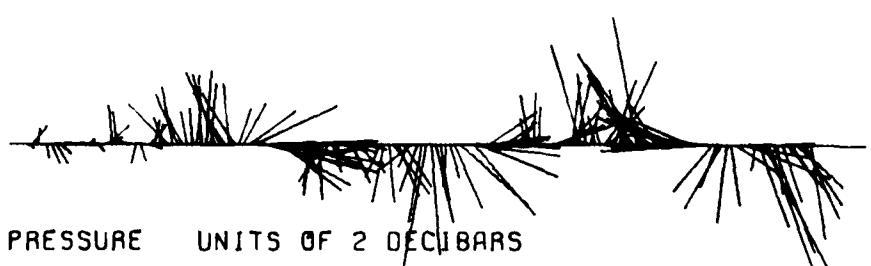
MOORING 628 VERTICAL DISPLAY TEMPERATURES



MOORING 629

VECTOR UNITS OF 10.2.1 CM/SEC

JUL SEP NOV JAN MAR MAY

6291A10GAU24
203 M6293A10GAU24
1500 M6295C10GAU24
4008 M

PRESSURE UNITS OF 2 DECIBARS

6292A10GAU24
505 M

512

518

524

530

2842

2848

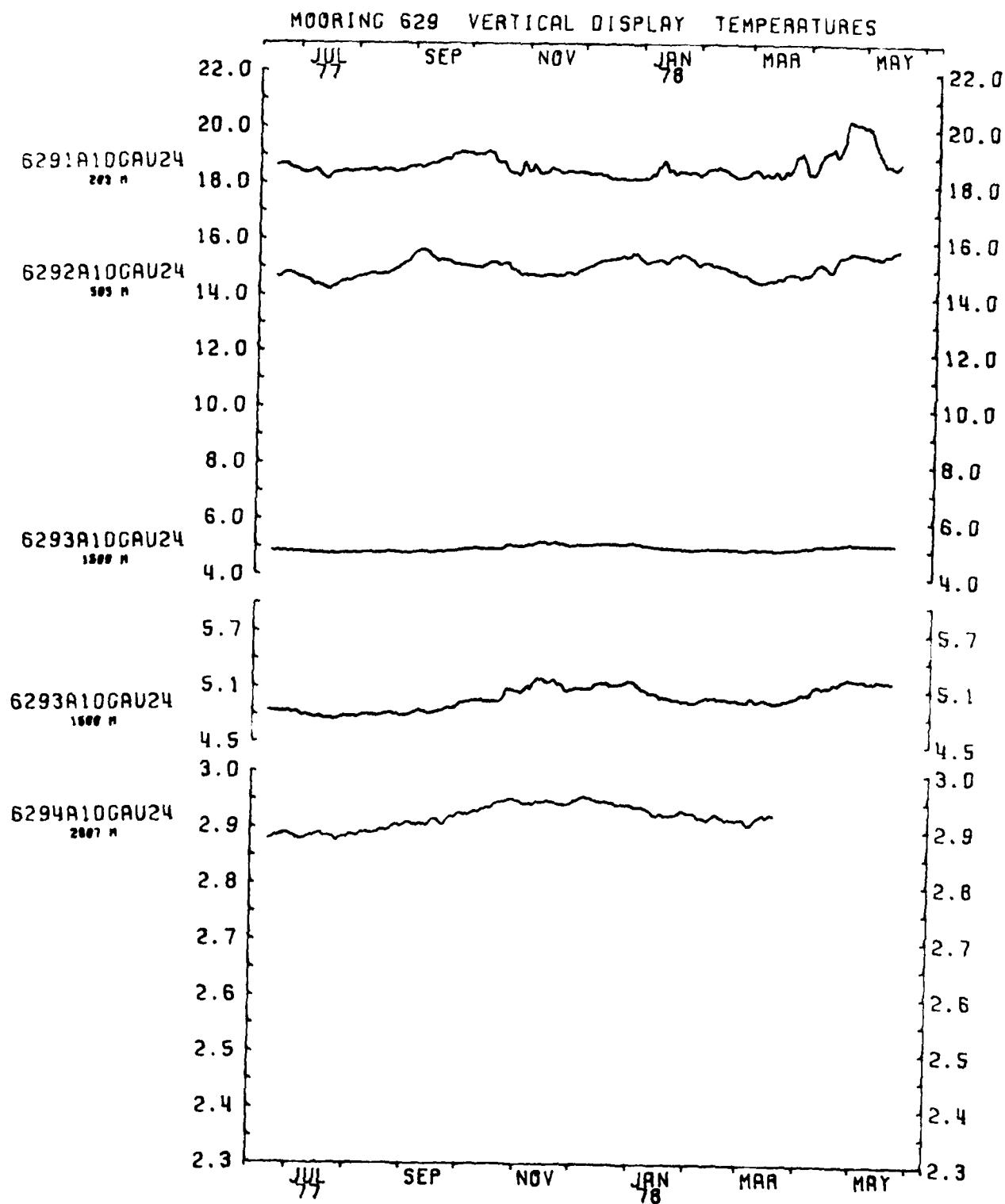
6294A10GAU24
2007 M

2854

2860

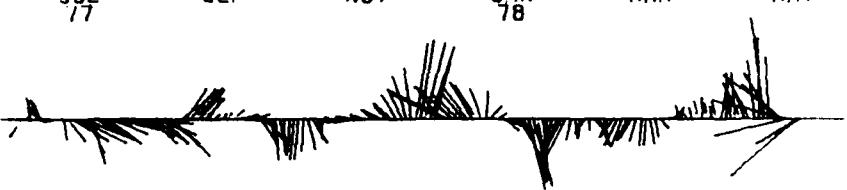


512
518
524
530
2842
2848
2854
2860
PRESSURE DECIBARS



MOORING 630 VECTOR UNITS OF 10.2 CM/SEC

JUL 77 SEP NOV JAN 78 MAR MAY

6301B1DGAU24
200 M6304A1DGAU24
1000 M

PRESSURE UNITS OF 2 DECIBARS

542

6302A1DGAU24
542 M

548

554

3554

6306A1DGAU24
3554 M

3560

4998

6308A1DGAU24
4998 M

5004

5010

542

548

554

3554

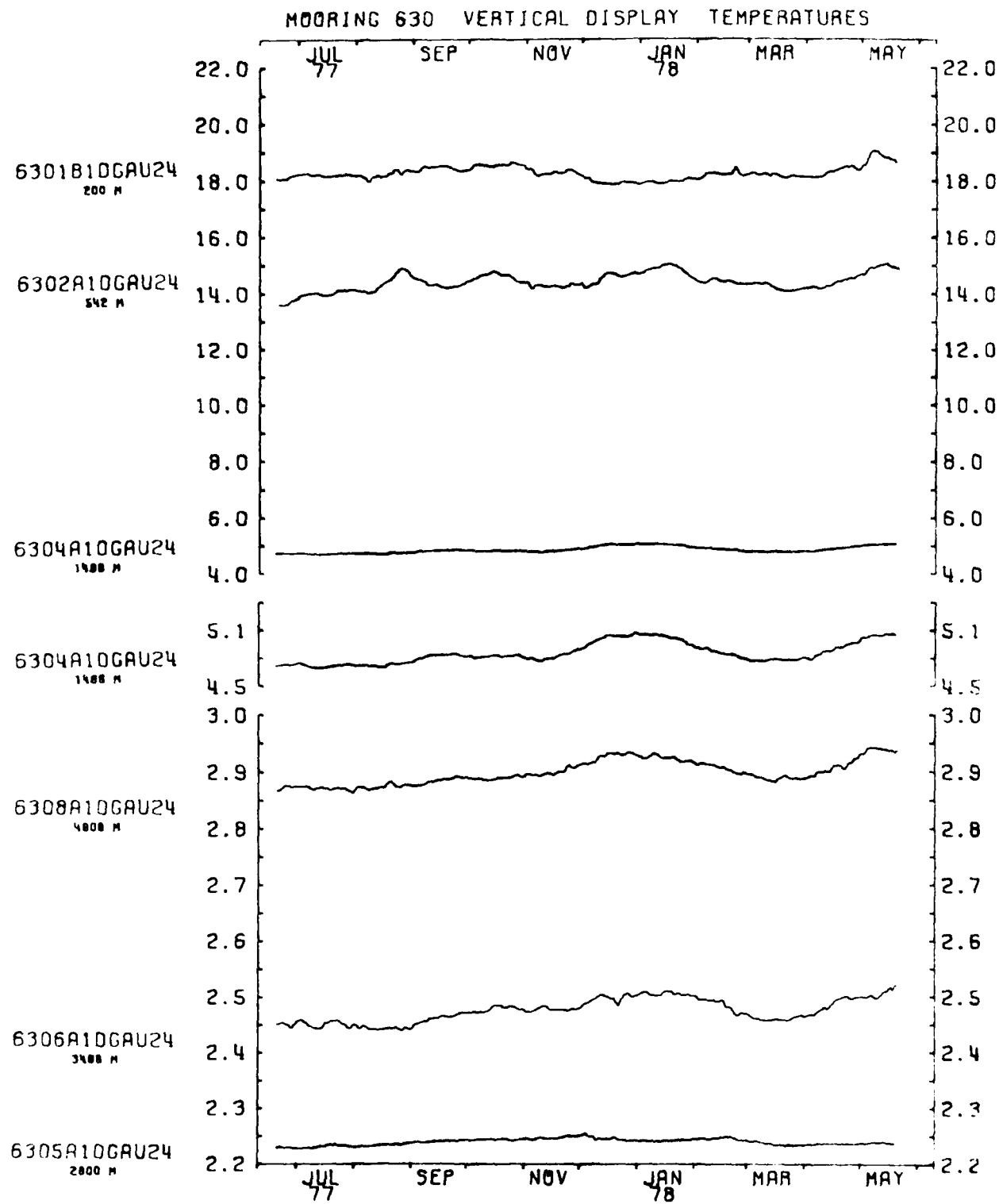
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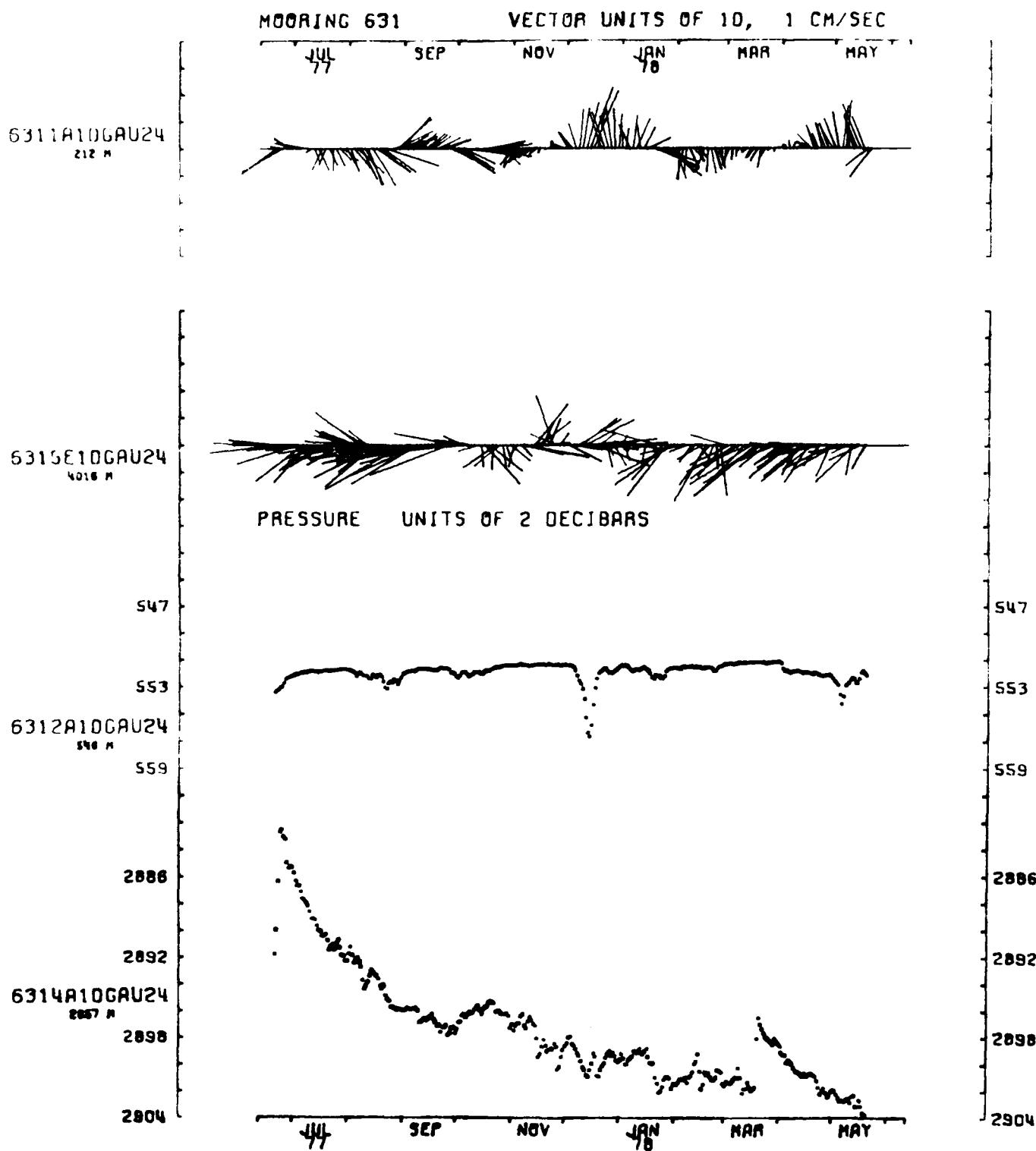
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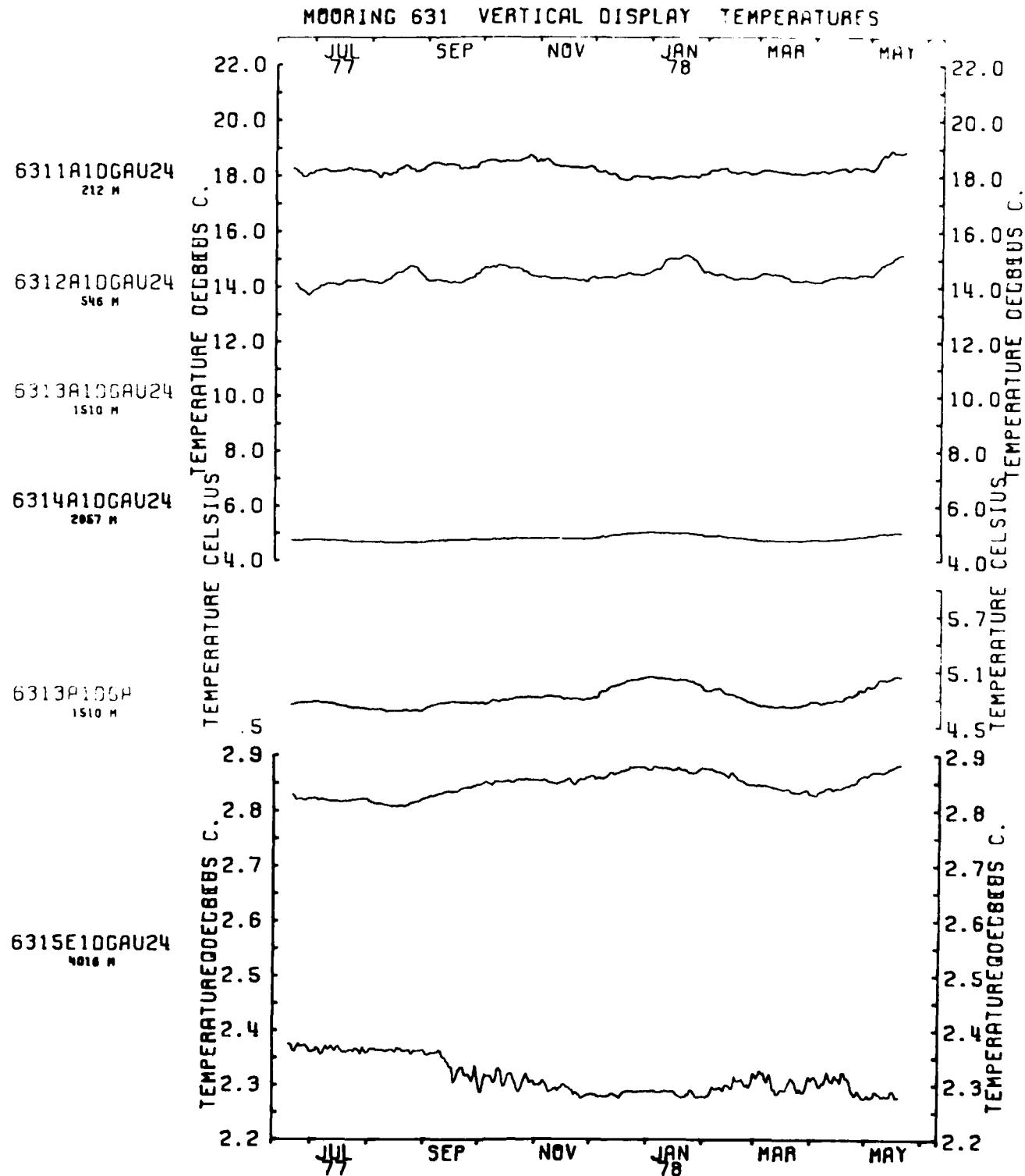
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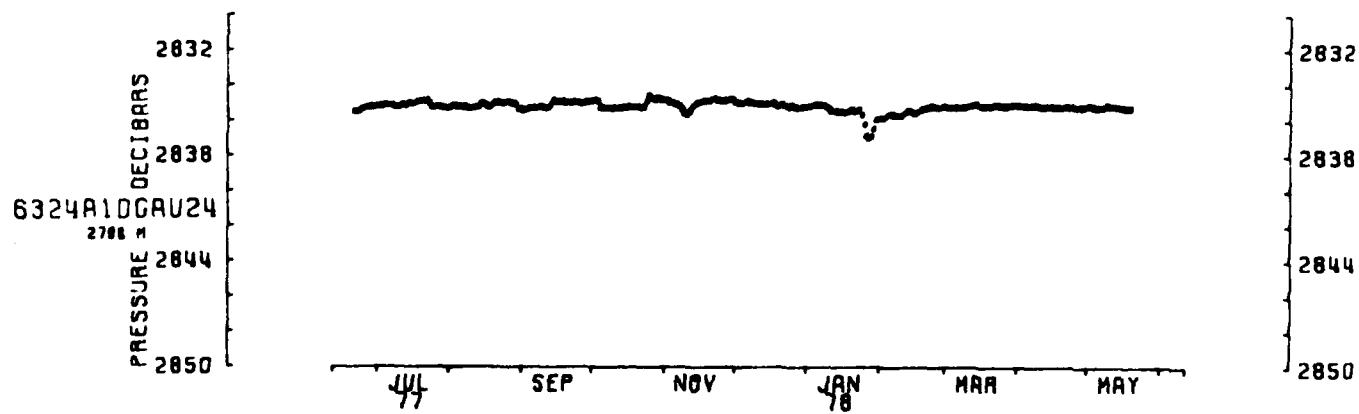
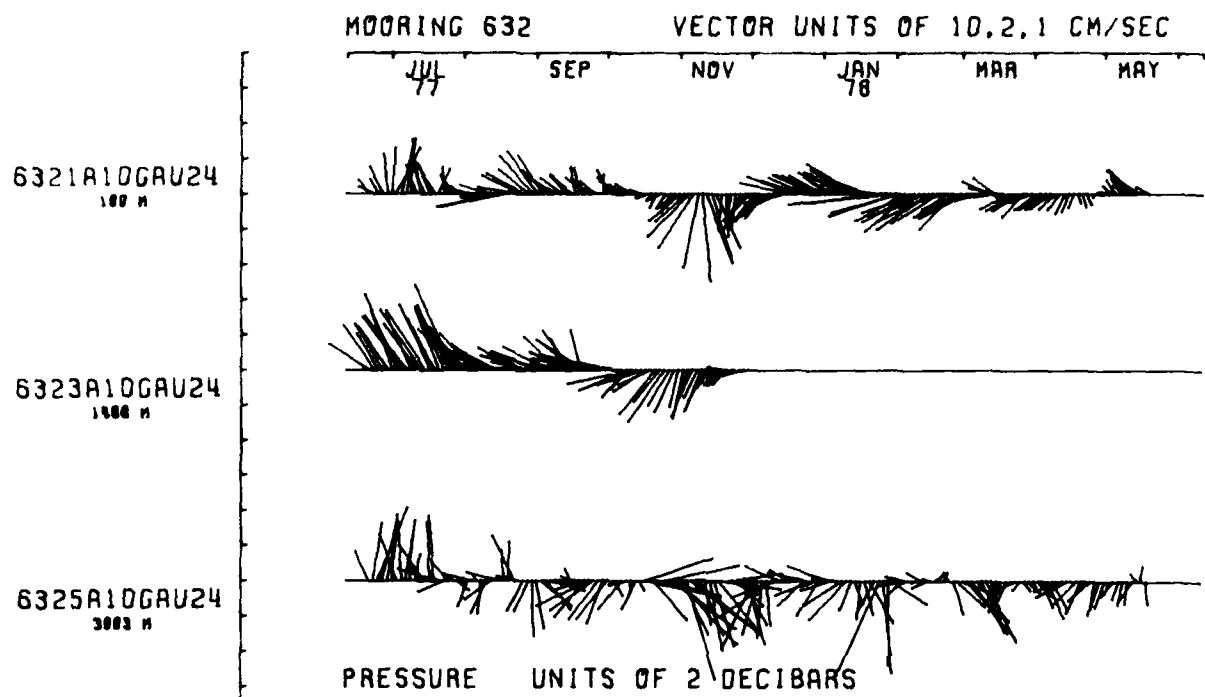
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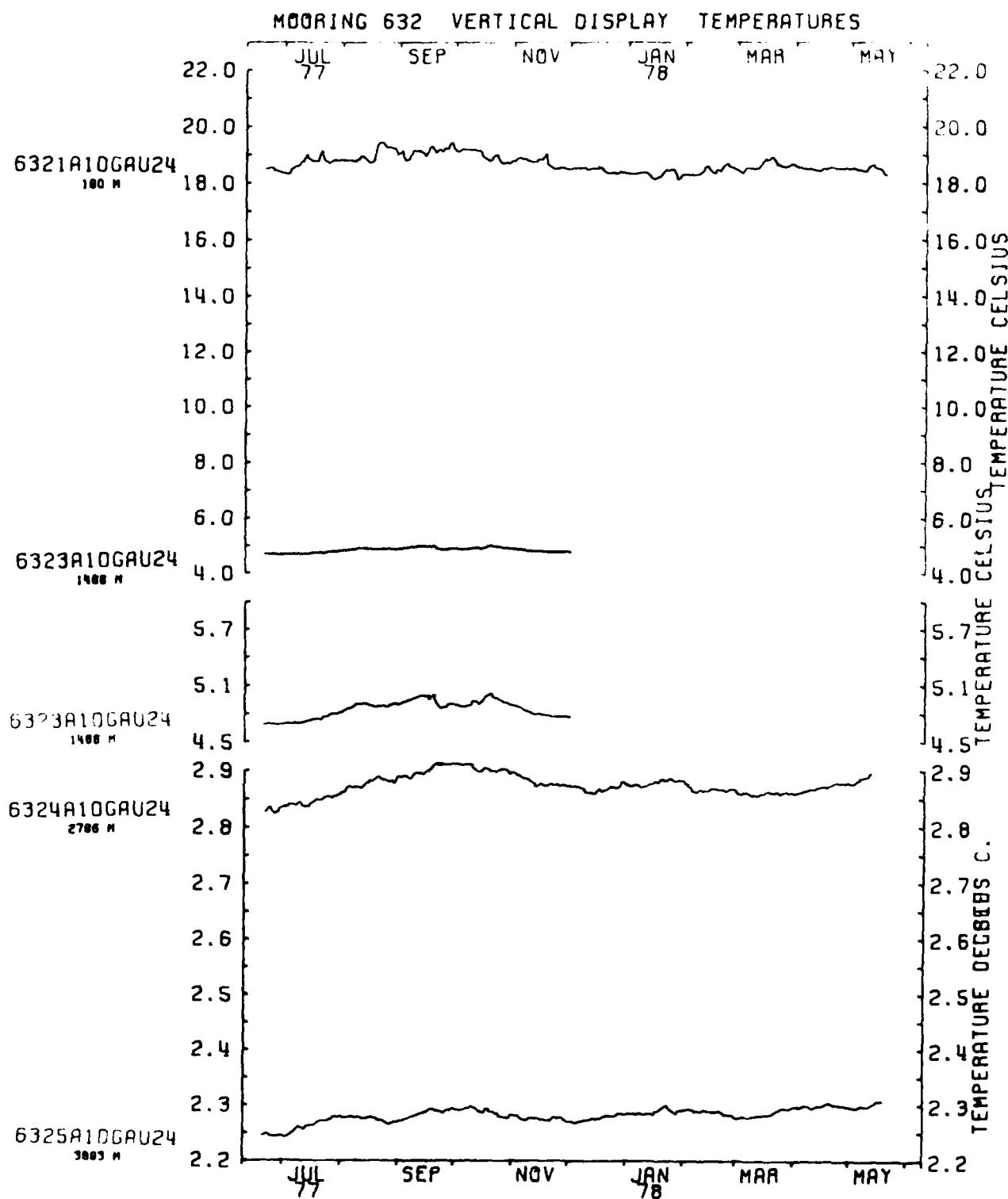
JUL 77 SEP NOV JAN 78 MAR MAY

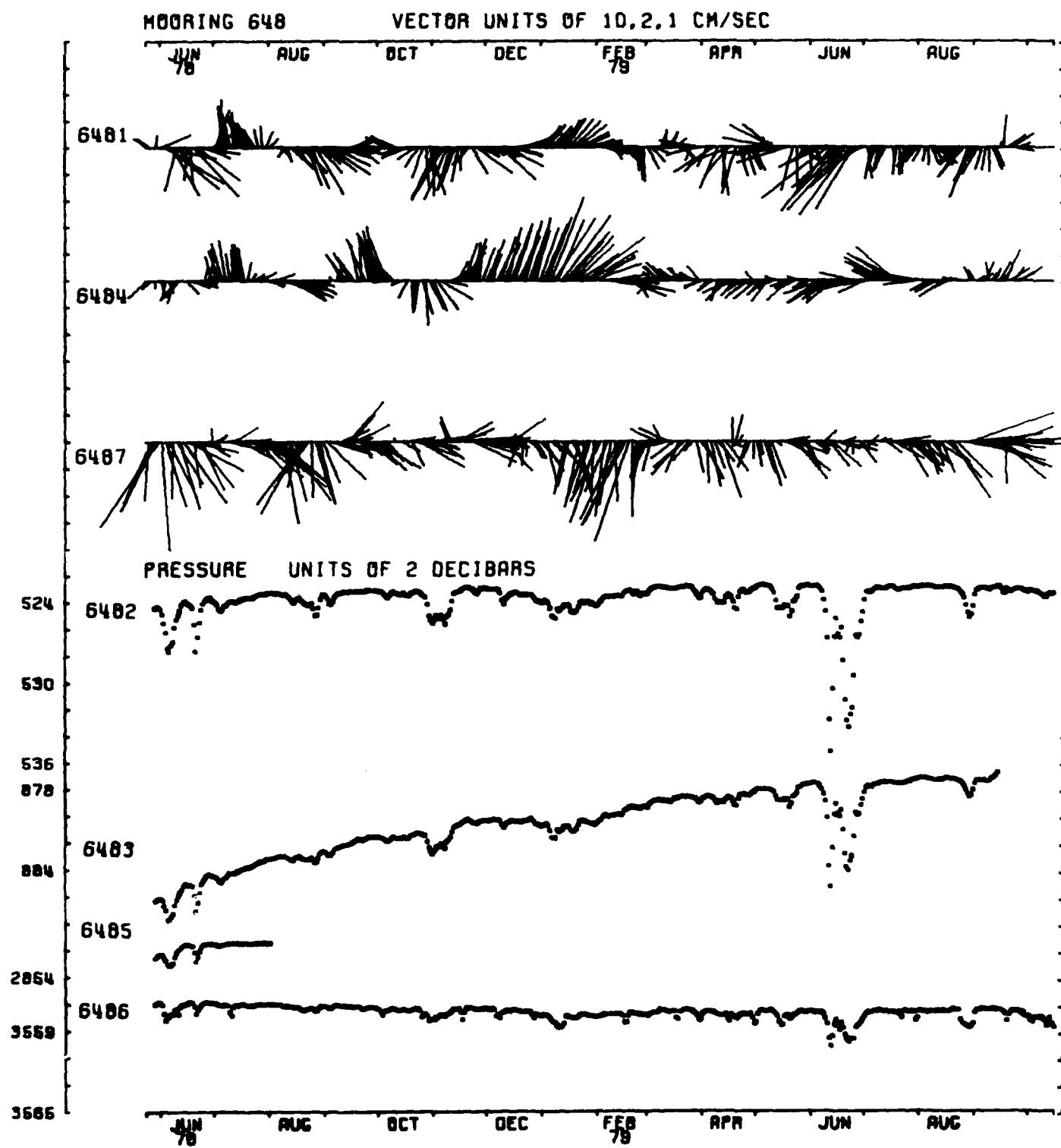




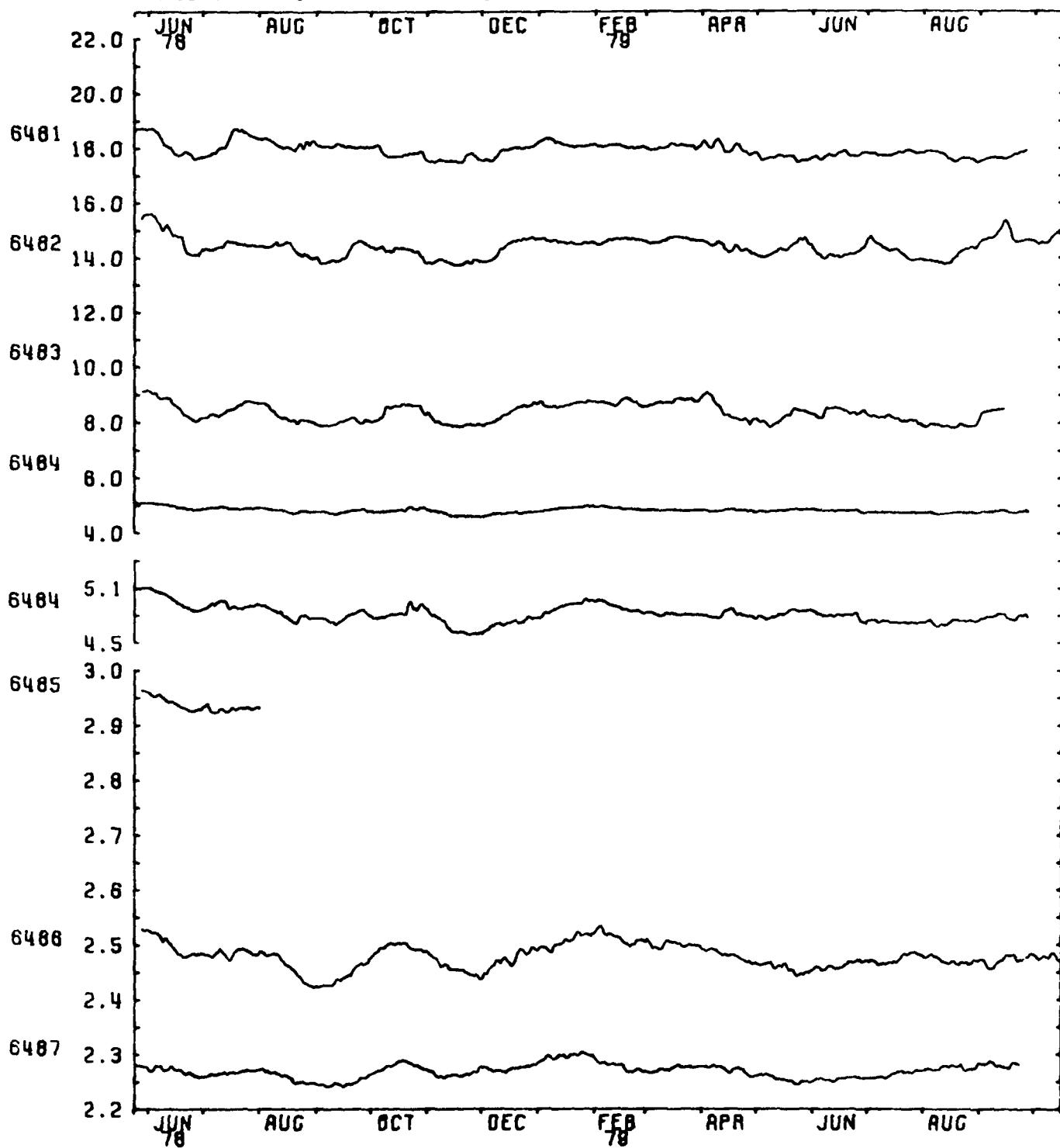








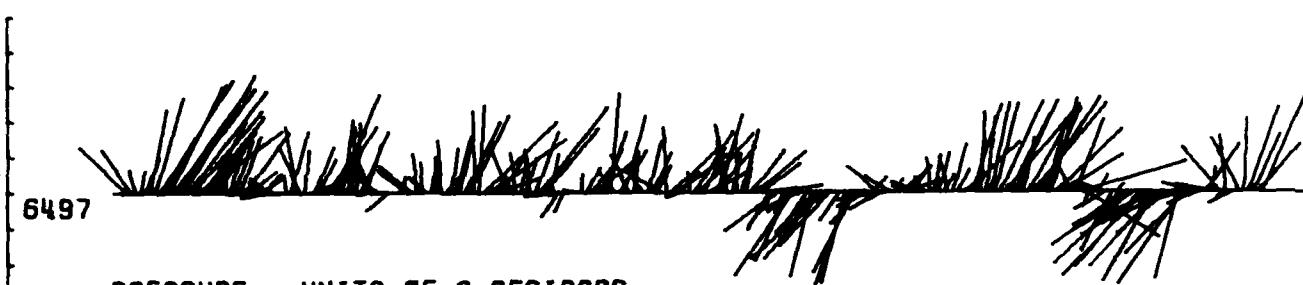
MOORING 648 VERTICAL DISPLAY TEMPERATURES



MOORING 649 VECTOR UNITS OF 10 , 1 CM/SEC

JUN AUG OCT DEC FEB APR JUN AUG
78 79

6491



6497

PRESSURE UNITS OF 2 DECIBARS

530

536

734

740

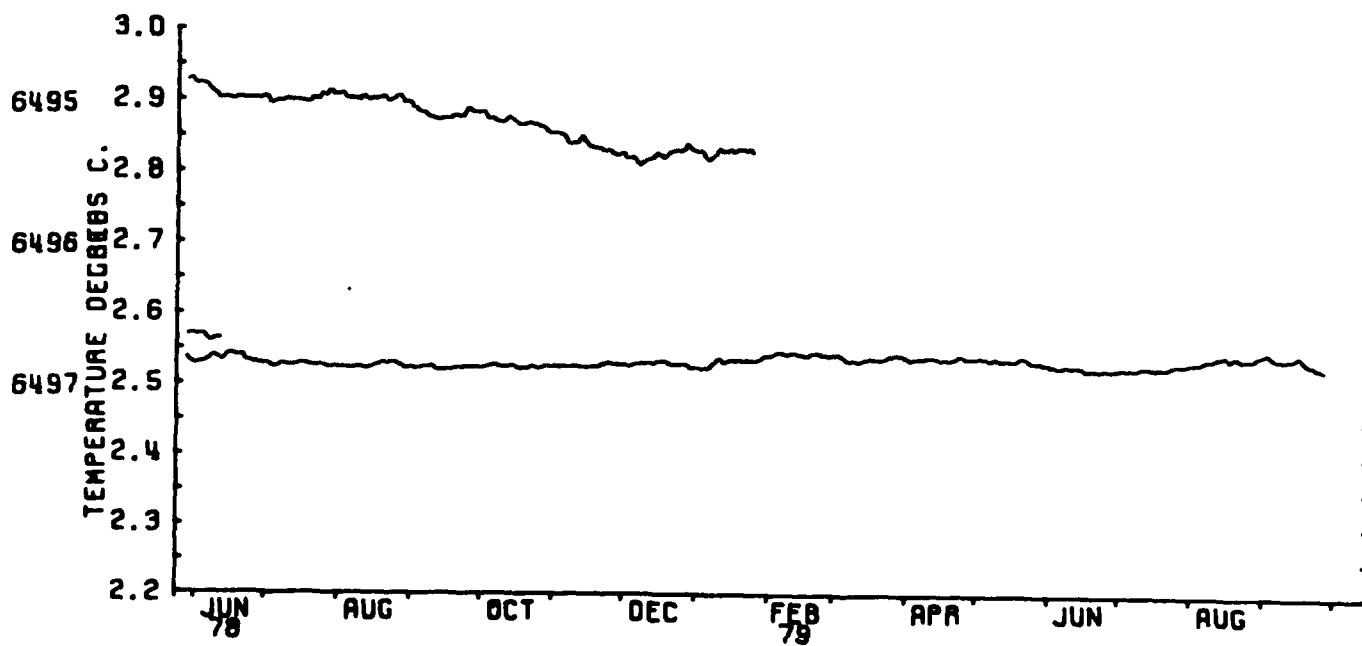
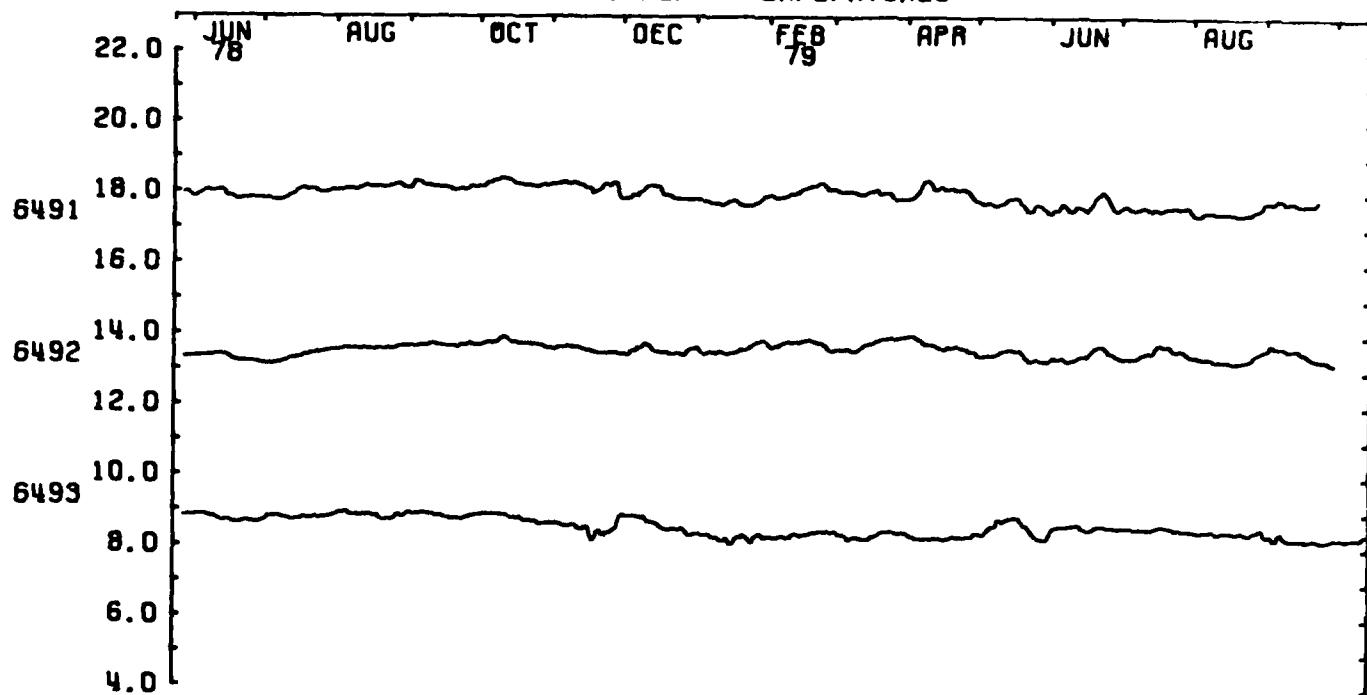
2864

3464

3470

JUN AUG OCT DEC FEB APR JUN AUG
78 79

MOORING 649 VERTICAL DISPLAY TEMPERATURES



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Summaries are presented of current, pressure and temperature measurements from clusters A and B of the POLYMODE III experiment. These clusters had five moorings apiece and were deployed for 11.5 months. With a few exceptions, current meters were set at nominal depths of 200, 1500 and 4000 m and temperature/pressure recorders at 400 and 2800 m on each mooring. A site mooring was deployed at both cluster locations for an additional 17 months. Displays include time series, histograms, progressive vector diagrams, scatter plots, spectra, and statistics.		

Woods Hole Oceanographic Institution
WHOI-80-40

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ASSOCIATED OCEANOGRAPHIC OBSERVATIONS, VOLUME XXII
(POLYMOKE ARRAY 111 CLUSTERS A, B AND SITE MOORINGS)
1977-1979 by Susan A. Tarbell, 59 pages, September
1980. Prepared for the Office of Naval Research
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(POLYMOKE ARRAY 111 CLUSTERS A, B AND SITE MOORINGS)
1977-1979 by Susan A. Tarbell, 59 pages, September
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Summaries are presented of current, pressure and

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200, 1500 and 4000 m and temperature-pressure recorders
at 400 and 2800 m on each mooring. A site mooring was
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Displays include time series, histograms, progressive
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